



# **NAVAL POSTGRADUATE SCHOOL**

**MONTEREY, CALIFORNIA**

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## **JOINT APPLIED PROJECT**

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### **STREAMLINING THE ACQUISITION PROCESS: A DCAA FIELD-GRADE PERSPECTIVE**

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**By:        Russell Braswell  
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             March 2014**

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<b>14. SUBJECT TERMS</b> DCAA – Defense Contract Audit Agency, DCMA – Defense Contract Management Agency, AFSPC – Air Force Space Command, SMC – Space and Missile Systems Center (Los Angeles Air Force Base), CFI – Command Feedback Initiative, Lean Six-Sigma, Lean Business Processes, DPAP – Defense Procurement and Acquisition Policy, Contract Negotiation, Auditing			<b>15. NUMBER OF PAGES</b> 109	
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**STREAMLINING THE ACQUISITION PROCESS:  
A DCAA FIELD-GRADE PERSPECTIVE**

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Submitted in partial fulfillment of the requirements for the degree of

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# **STREAMLINING THE ACQUISITION PROCESS: A DCAA FIELD-GRADE PERSPECTIVE**

## **ABSTRACT**

The procurement process is designed to be a three-way relationship between the buying command(s), the Defense Contract Audit Agency (DCAA), and the Defense Contract Management Agency (DCMA). Over the last 40 years, these entities have evolved independently of one another. Many of the re-organizations and policy changes were not coordinated outside the organizations, and as a result, the current working relationship between these entities is not at an optimal level. For DOD program managers, a working knowledge of these organizations is critical to delivering projects on time and on budget.

To assist program managers in creating a more effective and efficient acquisition cycle, we propose a joint-applied-project through NPS to address the following:

- Research the original intent of the three organizations and map out the intended workflow/responsibilities within the acquisition mission.
- Research and document major changes in the evolution of each agency over the past 40 years.
- Apply Lean six-sigma principles to the DOD Acquisition team organization and processes, including:
  - a. Develop a responsibility/process map for the three agencies based on current policies.
  - b. Review our findings for overlap/redundancy, miscommunication, and other opportunities efficiency improvement within the acquisition process.

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

ACC	Army Contracting Command – Redstone
ACO	Administrative Contracting Officer
ADM	Acquisition Decision Memorandum
AEHF	Advanced Extremely High Frequency
AFSPC	Air Force Space Command
AICPA	American Institute of Certified Public Accountants
AOA	Analysis of Alternatives
APB	Acquisition Program Baseline
APSS	Acquisitions Planning and Support Services)
AT&L	Acquisition, Technology, and Logistics
BO	Branch Office
BOE	Basis of Estimate
BOM	Bill of Materials
CAR	Contract Action Report
CAS	Cost Accounting Standards
CCAS	Contingency Contract Administrative Services
CDD	Capability Development Document
CDR-A	Critical Design Review Assessment
CFI	Command Feedback Initiatives
CLR	Customer Liaison Representative
CMO	Contract Management Office
COM	Cost of Money or Facilities Capital Cost of Money
COTS	Commercial Off-the-Shelf
CPA	Certified Public Accountant
CRI	Cost Recovery Initiative
CTE	Critical Technology Elements
DACO	Divisional Administrative Contracting Officer
DAU	Defense Acquisition University
DCAA	Defense Contract Audit Agency
DCMA	Defense Contract Management Agency
DFARS	Department of Defense FAR Supplement
DLA	Defense Logistics Agency
DOD	Department of Defense
DoDIG	Department of Defense Inspector General
DPAP	U.S. Defense Procurement and Acquisition Policy Mr. Shay Assad, Director
DWSS	Defense Weather Systems Directorate
EELV	Evolved Expendable Launch Vehicle

ELS	EELV Launch Services
EVM	Earned Value Management
FAR	Federal Acquisition Regulation
FBO	Federal Business Opportunities
FDDR	Full Deployment Decision Review
FLA	Financial Liaison Advisors
FOIA	Freedom of Information Act
FPR	Forward Pricing Rate
FPRA	Forward Pricing Rate Agreement
FPRP	Forward Pricing Rate Proposal
FPRR	Forward Pricing Rate Recommendation
FRPDR	Full Rate Production Design Review
FRR	Full Rate Production
G&A	General and Administrative
GAAP	Generally Accepted Accounting Principles
GAAS	Generally Accepted Auditing Standards
GAGAS	Generally Accepted Government Auditing Standards
GAO	Government Accountability Office
GPS	Global Positioning System
HSI	Human Systems Integration
ICD	Initial Capabilities Document
IFRS	International Financial Reporting Standards
IPT	Integrated Product Team
IRR	Independent Reference Review
ISD	Integrated System Design
IWG	Integrated Working Group
JROC	Joint Requirements Oversight Council
KO	Contracting officer
KPP	Key Performance Parameters
LAAFB	Los Angeles Air Force Base
LMSSC	Lockheed Martin Space Systems Company
LR	Launch and Range
LRIP	Low Rate Initial Production
LSS	Lean Six Sigma
MAAR	Mandatory Annual Audit Requirement
MDA	Milestone Decision Authority
MDS	Missile Defense Systems Division



MILCON	Military Construction
MILPERS	Military Personnel
MILSATCOM	Military Satellite Communication
MOCAS	Mechanization of Contract Administration Services
OCO	Overseas Contingency Operation
ODC	Other Direct Cost
O&M	Operations and Maintenance
PCO	Procuring Contracting Officer
PEO	Program Executive Officer
PGI	Procedures, Guidance, and Information
PK	Contracting Directorate
PM	Program manager
PPNM	Pre-Price Negotiation Memorandum
PROC	Procurement
RDT&E	Research, Development, Test and Evaluation
RFP	Request for Proposal
RO	Resident Office
SAE	Senior Acquisition Executive
SAS	Statements on Auditing Standards
SBIRS	Space Based Infrared Systems Directorate
SCM	Supply Chain Management
SDT	Space Development and Test Directorate
SL	Space Logistics
SMC	Space and Missile Systems Center
SOW	Statement of Work
SRN	Spacelift Range and Network System Division
SSAE	Statements on Standards for Attestation Engagements
SY	Space Superiorly
TDS	Technology Development Strategy
USD	U.S. Undersecretary of Defense
USMDA	U.S. Missile Defense Agency
USTRANSCOM	U.S. Transportation Command

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# **I. INTRODUCTION**

## **A. BACKGROUND**

Since 1965, Department of Defense (DOD) commands, the Defense Contract Audit Agency (DCAA), and the Defense Contract Management Agency (DCMA) have been tasked by Congress to work together to support the DOD and the warfighter. Specifically:

- Buying commands consist of contracting officers (and staff) authorized to enter into binding commitments on behalf of the U.S. government. Multiple commands exist within each service branch of the DOD, and are tasked with obtaining the supplies, assets and services required by their respective departments. Buying commands are responsible for constructing and publishing requests for proposals, awarding contracts, setting rates and making any binding decision regarding the contract (including payments and terminations).
- The DCAA was established in 1965 by a directive of the DOD for the purpose of performing all contract auditing services for the Department of Defense and providing accounting and financial advisory services, in connection with the negotiation, administration, and settlement of contracts and subcontracts, to all DOD procurement and contract administration activities.
- The DCMA provides contract administration services to the Department of Defense Acquisition Enterprise and its partners to ensure delivery of quality products and services to the warfighter; on time and on cost. This includes assistance constructing effective solicitations, identifying potential risks, selecting the most capable contractors, and writing contracts, setting rates, as well as monitoring contracts already awarded.

Over the last 40 years, these entities have evolved independently of one another. Many of the reorganizations and policy changes were not coordinated outside the

organizations, and as a result these three critical elements of the acquisition team work independently alongside one another rather than working in symphony to deliver a common objective to the warfighter. For DOD program managers, a working knowledge of these organizations is critical to delivering projects on time and on budget.

## **B. PURPOSE**

The overall purpose of our research is to develop a comprehensive understanding of the role each of the three agencies play in the overall acquisition process, and to examine the relationships between them. To accomplish this objective, we will apply the Lean Six-Sigma framework to:

- identify the key business processes within the overall DOD acquisition process,
- observe the current process flow,
- analyze the current process flow for efficiency opportunities, and
- improvements to the acquisition process with respect to delivering products to the warfighter on-time and on-cost.

We began by performing in-depth research into the mission, history and current challenges of each organization. We then examined the overall acquisition process, as detailed on the Integrated Defense Acquisition, Technology, and Logistics Life Cycle Management System (commonly referred to as the “Horseblanket Chart,” or “Horse Chart”), and determined where each organization’s various responsibilities fit into the overall process. Using the “Chart” as a tool, we outlined the acquisition process workflow, identifying the contract life cycle as the key driver of the process. We then applied Lean Six-Sigma principles to the contract life cycle, specifically analyzing the interrelationship between buying commands, DCMA and DCAA. The results from this study will hopefully contribute to the ongoing conversation within the DOD Acquisition community regarding ever shuffling priorities and mismatched objectives in the present era of sequestration and shrinking budgets.

## **C. RESEARCH QUESTIONS**

Our research provided us with sufficient background data to answer the following primary and secondary questions:

Primary

1) Where does everyone fit into the overall acquisition process?

Secondary

2) What is the key business process that drives the overall acquisition?

3) What is each agency's role?

4) How do the agencies interact?

5) Are there opportunities for increased efficiency?

## **D. BENEFITS AND LIMITATIONS**

The information we researched and reviewed will help in understanding and analyzing the various entities involved in the acquisition process. Our research should establish a basis for further, more detailed inquiries into the relationships between acquisition agencies and their contribution to the process as a whole. The overall intent of our research is to substantiate the theory that while each component of the acquisition process operates independently, efficiencies may be gained by viewing each entity as an element of a larger "acquisition team," bonded by a common goal.

The five branches within the Department of Defense consist of hundreds of separate Commands. These Commands conduct business daily with hundreds of DCAA and DCMA offices, as well as with thousands of contractors. We have no intent to provide a statistical sample of these transactions; however we have obtained some readily accessible actual data to use as examples of the business process we researched. Additionally, we limited our review of "buying command" activity to Air Force Space Command to serve as an example of a typical command's activity. As our research is qualitative rather than quantitative in nature, we do not have a statistical sampling plan.

Human Subject Research was not used in the performance of this study. No interviews of DOD personnel were conducted or relied on during our research. All feedback and performance data obtained was gathered by the agencies themselves and readily available for official use by request from the respective Agency representative. The opinions expressed herein reflect the conclusions drawn by the authors based on our research, education and experience.

## **E. ORGANIZATION OF THE REPORT**

This report is organized into four chapters. Chapter I provides introductory information for the research, including: background and purpose for the research, primary questions that the research aims to answer, and the benefits and limitations. Chapter II explores current and historic literature and data gathered on DOD acquisition, which includes reports from the GAO, the DoDIG, DCAA, DCMA, and Air Force Space Command. Chapter III presents the authors' analysis of the data gathered. Chapter IV consists of a summary of the research, conclusions, recommendations, and areas for future study.

## **F. SUMMARY**

This chapter provided background information on the DOD acquisition process. It also described the purpose of our research, the primary research questions for the study, and benefits and limitations of the research. The next chapter reviews current literature in the area of services acquisition.



## **II. LITERATURE REVIEW**

### **A. INTRODUCTION**

In this chapter, we review a collection of background literature, including primary source documentation published by the DCAA, DCMA, Air Force, GAO, DoDIG, and Defense industry publications. The purpose of this review is to gain a better understanding of the purposes, plans, and current state of each of the three entities covered by this study. The chapter is divided by organizations- DCAA, DCMA and finally the U.S. Air Force Space and Missile Systems Center (SMC). For each entity, we will examine the responsibilities, programmed focus, strategic plan and recent events impacting the organization.

### **B. DEFENSE CONTRACT AUDIT AGENCY**

#### **1. DCAA Responsibilities and Primary Function**

Operating under the Under Secretary of Defense (Comptroller), the DCAA has been tasked with providing audit and financial advisory services to the DOD. The agency also provides these services to other federal entities responsible for acquisition and contract administration, on a cost-reimbursable basis. The intent of DCAA's services is to ensure customers are receiving the best value for dollars spent. For example, DCAA performs audits of proposals received by SMC. Based on the costs questioned in DCAA's audit report, SMC may negotiate a lower rate, and apply the savings towards other command needs. In its capacity, DCAA is tasked to protect the public interest, including that of both the taxpayer and the warfighter.

According to the DCAA website, DCAA consists of over 300 field offices and 4,000 employees. Its auditors are tasked with the examination and review of contractor accounts, records, and business systems to ensure the contractor's business practices and procedures are in accordance with the FAR, the DFARS, and other applicable government regulations and laws, as required. All DCAA audits and auditors are required to adhere to a set of professional standards contained in the Generally Accepted Government Auditing Standards (GAGAS), or "Yellowbook." GAGAS provides the

government's adaptation of Generally Accepted Auditing Standards, or the quality control framework for conducting audits with competence, integrity, objectivity, and independence (GAO, 2011).

DCAA has no direct contracting authority, but provides recommendations and advice to government officials who are responsible for acquisition and government contract administration, such as contracting officers (CO), administering contracting officers (ACO), and procuring contracting officers (PCO). DCAA provides a number of deliverables to its stakeholders, including rate request memorandums, audit reports, voucher (billing) reviews and negotiation support. As the main focus of DCAA remains audit services, the major audits offered by DCAA include:

- Incurred Cost
- Labor Floor Checks (MAAR 6)
- Purchase Existence & Consumption (MAAR 13)
- Billing Systems
- Paid Voucher/Direct Billing Systems
- Provisional Billing Rates
- Pre/Post Award Account Systems
- Proposals
- CAS Compliance

## **2. What is an “Audit”?**

The commonly used term “Auditing” actually refers to “Audit, Attestation and Assurance” services. These services are provided by professional certified public accountants and auditors to provide end-users/investors with an elevated degree of assurance as to whether the subject of the audit is meeting or has the ability to meet its business objectives (Louwers, 2007). In the case of the acquisition community, this could range from expressing an opinion on reasonableness of a contractor's proposal to providing an opinion on the effectiveness of a contractor's accounting system.

Government “audits” must be conducted in accordance with *Generally Accepted Government Auditing Standards* (GAGAS); a set of standards produced by the GAO

establishing the quality standards that must be followed when conducting an audit. Adherence to these standards is the basis for an audit opinion's elevated assurance on the subject matter. In addition to general standards applying to all activities, GAGAS provide instruction covering three areas of auditing, attestation and assurance services: Financial Audits, Attestation Engagements, and Performance Audits.

*Financial Audits* specifically refer to an independent auditor expressing an objective opinion on an organization's financial statements; or management's assertion of the organization's financial position. The opinion expressed comes in the form of an audit report, expressing an opinion over whether an entity's balance sheet, income statement and statement of cash flow are in accordance with U.S. *Generally Accepted Accounting Principles* (GAAP). Financial audits are generally the most intensive and detailed form of audit, offering the highest degree of assurance, and are conducted in accordance with U.S. *Generally Accepted Auditing Standards* (GAAS) and the American Institute of CPA's (AICPA) *Statements on Auditing Standards* (SAS), both of which are incorporated and expanded upon in the GAGAS (GAO, 2011). Generally, DCAA does not perform financial audits.

*Attestation* is a type of audit and consists of a practitioner being engaged to issue a report on specific subject matter, or assertions on the subject matter, that is the responsibility of a third party (Louwers, 2007). These engagements often focus on compliance with laws/regulations/contracts, prospective information, performance, internal control and accounting systems. Attestation engagements must be conducted in accordance with the AICPA's *Statements on Standards for Attestation Engagements* (SSAE), which are incorporated into, and expanded upon within, chapter 5 of the Government Auditing Standards (GAO, 2011). These engagements and fall into three categories:

Type of Engagement	Assurance	Description
Examination	Positive	Management's assertions appear in accordance with the applicable criteria.
Review	Negative	Did not observe anything suggesting management's assertions are <i>not</i> in accordance with the applicable criteria.
Agreed-Upon Procedures	None	Details the results of the procedures performed.

Table 1. Types of Audits

- Examinations – Offer *positive* assurance, meaning the auditor believes management's assertions are in accordance with the applicable criteria. Similar to financial audits, examinations require significant procedures to be performed, and result in a high level of assurance. The majority of audits conducted by DCAA are examinations.
- Reviews – Offer *negative* assurance, meaning the auditor did not observe anything suggesting management's assertions are *not* in accordance with the applicable criteria. This provides a moderate level of assurance, and requires a much lower scope of work than an examination. GAGAS 1.23 bars reviews over information related to internal controls, or compliance with laws and regulations (GAO, 2011).
- Agreed-upon Procedures – Offer no opinion, however detail the procedures agreed to by the requestor and auditor, and findings and observations of the auditor resulting from the procedures.

*Performance Audit* services expand Auditing and Attestation to include nonfinancial information and non-economic subjects where decision-makers must rely on the subject matter, such as specific requirements, measures or business practices. DCAA performs some operational audits that fall under this area. The requirements for performance audits are addressed in chapter six of the *Government Auditing Standards* (GAO, 2011).

While DCAA offers a variety of services and opinions, the detection of fraud and similar unlawful activities is not the primary purpose of an audit. The auditor must still plan and perform the audit to obtain reasonable assurance over the contractor's submission and determine the supporting documentation is free from material misstatements, whether caused by error or fraud.

The type of audit requested by the contracting officer will directly impact both the amount of time/scope of work to be undertaken by DCAA, as well as the degree of assurance provided in the final audit report.

### **3. Programmed Focus**

DCAA's audit effort can be classified as "demand" work and "programmed" work. Demand work includes all requests from contracting officers and DCMA that are received throughout the year. Programmed work includes annual known work that DCAA is responsible to perform, such as annual incurred cost audits, and mandatory annual audit requirements (MAAR) 6 (Labor floor checks) and 13 (material existence and consumption).

Due to manpower limitations, DCAA must make choices each year on what work is included in the program plan, and what work cannot be accommodated. In determining the programmed work to be undertaken, DCAA employs a "risk-based" planning process to focus the Agency's priorities on the highest payback opportunities for the DOD, the warfighter, and the taxpayer (Fitzgerald, 2013). "High risk," according to DCAA, generally involves high-dollar proposals, historically high rates of questioned costs, or circumstances where the contractor's internal controls are historically weak to almost nonexistent. The goal is to efficiently apply agency resources in such a way as to achieve the greatest return to the DOD and taxpayer (DCAA, 2012).

A few of DCAA's highest priority assignments include:

1. Audits of Overseas Contingency Operations (OCO): By definition, OCO is funding set aside to provide for the urgent continuous support of our warfighters fighting on the ground. In both the Iraq and Afghanistan Wars, much of the contract work is often farmed out to foreign companies.

Therefore, the typical internal control structure seen in America's defense contractors do not necessarily apply to their foreign partners. Although these contractors are obligated to adhere to the same laws and regulations as with companies in the U.S., they often lack the understanding and familiarity with the guidelines. Foreign companies generally adhere to *International Financial Reporting Standards* (IFRS), if any, rather than U.S. GAAP (Ernst & Young, 2008). Due to the differences between these entities' methods of doing business, it is DCAA's priority to increase oversight over these companies. In 2012, DCAA audited roughly \$6.4 billion in OCO contracts and recommended a reduction in costs of about \$1.1 billion (DCAA, 2012).

2. Perhaps no other audit area attracts more attention from the acquisition community than Forward Pricing Audits. These audits provide assurance on the data used for negotiating a fair and reasonable contract price. In broad terms, the forward pricing audits are completed before the contract is awarded. Their purpose is to evaluate contractor cost estimates for goods or services being proposed for a future product. In 2012, DCAA performed over 1,800 forward pricing audits and identified \$9.9 billion in cost savings (DCAA, 2012).
3. Following the forward pricing audits in visibility are the incurred cost audits. These engagements provide assurance as to the accuracy of the contractor's historical claimed costs. DCAA examines historical claimed costs to determine whether the costs are allowable, allocable, and reasonable as outlined in FAR part 31. Incurred cost audits assist the contracting officer in the recovery of questionable costs before the contract is closed out. Unfortunately, the Contract Disputes Act defines the statute of limitations for government claims against contractors at six years (41 U.S. Code Chapter 71). This means that once incurred cost proposals are submitted to DCAA and have not been audited within six years, the government loses its prerogative to review the costs and seek

reimbursement for questionable items. Over the past couple of years, DCAA has received some negative publicity with respect to the backlog of incurred cost audits that have not been completed. In order to mitigate this serious situation, DCAA has developed a detailed action plan beginning in FY2012, however the pressure of the statute of limitations and the lack of available resources has led to an increasing number of incurred cost proposals going unaudited (DCAA, 2012).

4. Two other areas audited by DCAA are Equitable Adjustments and Termination Claim Audits: These two types of audits represent more of a challenge to the auditor because of their complexity and relatively high risk. In certain cases, contracts may be adjusted or terminated before their completion. Additionally, depending on contract complexity, litigation before the Armed Services Board of Contract Appeals of the U.S. Court of Federal Claims may also occur. In 2012, DCAA examined approximately \$6.4 billion under these two types of audits, and identified \$405 million in exceptions (DCAA, 2012).
5. The use of DCAA Financial Liaison Advisors (FLA): FLAs are co-located at major buying commands within the DOD. The FLA provides assistance to the contracting officer when complex audit reports must be interpreted and used in the negotiation of a fair and reasonable contract price (DCAA, 2012).
6. Lastly, DCAA is also involved in investigative support. During the course of audit fieldwork, there are cases when indicators of fraud, waste, and abuse are observed. When such situations become evident, DCAA alerts the appropriate authorities responsible for conducting fraud investigations. The DoDIG as well as the U.S Department of Justice are two examples of offices that could potentially become involved in a case (DCAA, 2012).

Mr. Patrick Fitzgerald, Director, DCAA (DCAA, 2012) highlights several important acquisition programs where DCAA had a direct impact. Some examples of DCAA's assistance to program/buying offices include:

- In performing a thorough examination on the Apache AH-64 attack helicopter, DCAA identified over \$65 million in potential cost savings.
- DCAA supported the modernization of a critical asset: the Bradley Fighting Vehicle. In their support of this asset, DCAA audited a \$702 million proposal and the audit team identified over \$22 million in cost exceptions, primarily related to vendors and subcontractors.
- DCAA evaluated \$1.1 billion for the Navy to secure over 200 F414 engines for the F-18 Super Hornet fighter aircraft. The audit team's work resulted in a fair and reasonable price and saved the government approximately \$325,000 per engine or \$65 million on the total contract acquisition.
- Identified nearly \$70 million in current and future savings for 1,500 new Embedded GPS Inertial navigational Systems for the USAF.
- Secured \$237 million in net savings by evaluating \$4 billion in C-130J aircraft proposals.
- Supported over \$45 million in cash repayments to the government for the F-22 program.
- Conduct on-site audit oversight activities for the \$2 billion Kuwait Base Operations.

#### **4. Strategic Plan**

Dr. Cary Simon, of the Naval Postgraduate School, defines a strategic issue as a fundamental policy question or critical challenge affecting an organization's mandates, mission and values, to list a few (Simon, 2012). To accomplish its strategic goals, DCAA has outlined five areas that the agency wants to concentrate on over the next five-year time frame (DCAA, 2011):

- Goal 1: A "One Agency" concept with a culture of teamwork, excellence, accountability, mutual respect, integrity, and trust
- Goal 2: High-quality audits and other financial advisory services
- Goal 3: Highly skilled and motivated professionals dedicated to excellence in accomplishing its mission. That mission is to have dedicated professionals working together to deliver top-quality audit services to support the Department and the warfighter, and to protect the taxpayer's interest.
- Goal 4: Effective working relationships with DCAA's external stakeholders
- Goal 5: The workforce has the right space, the right equipment, and the right technology at the right time to successfully deliver on the mission.



According to DCAA's website, DCAA's services are used by all major commands throughout the DOD, working together to serve the warfighter and taxpayer is a principal goal. Contract procurement, management, and auditing activities directly affected 73.4% of the 2012 Defense budget. In FY 2011, DCAA was able to provide a return on investment of \$5.80 for each dollar invested in FY 2011. This translated to saving the taxpayer and warfighter \$3.5 Billion in FY 2011. The savings enjoyed by the DOD is applied to additional purchases, supplying the warfighter (Fitzgerald, 2012).

In order to provide better auditing services to the acquisition community, and increase the effective working relationships with DCAA's external stakeholders (goal #4), it is imperative that DCAA becomes much more proactive in communicating the services that are available to contracting officers, becoming more transparent, and adding value to the contracting community.

In his Director's Overview (DCAA, 2012), Mr. Fitzgerald explained that DCAA exists "to serve the warfighter and protect the taxpayer interests." As a result of DCAA's efforts, FY 2012 resulted in over \$4.2 billion in net savings to the government. DCAA identified these savings after examination of \$154 billion in contracting dollars and issuing over 6,700 audit reports.

It should be emphasized that DCAA is not just a commodity required by the FAR. DCAA plays a critical role in saving tax payer dollars, and assisting program offices with increasing the return on their investments. The success of the Agency is based on what happens after the audit has been completed, and its impact on the acquisition process. As expressed by Mr. Fitzgerald this requires the Agency "to perform the right audits, in the right way, with the right placement of resources devoted to the highest value work."

In order to build on the Agency's commitment to providing the best value for the DOD, Mr. Fitzgerald initiated several key strategies in 2012 that are also applicable in 2013 and beyond. The following will briefly touch on several areas of major importance to Mr. Fitzgerald. Those areas include:

- Allocating audit resources based on risk vs. audit quotes,
- Conducting rigorous evaluations of contractor data,

- Balancing quality and schedule with timeliness,
- Restructuring audit management of large contractors to drive quality through efficient organization
- Meeting with buying command and industry partners to better understand acquisition community challenges
- Supporting contracting officers at the negotiation table,
- Implementing the Strategic Plan to maintain audit quality and a positive work environment.

Allocating limited resources to the right audits requires a certain amount of risk management. In other words, in providing the most value in the acquisition process, using a risk-based approach assists in identifying areas in which greater audit concentration is required and where it is not. For example, depending on the dollar threshold, contract type (cost reimbursable vs. fixed priced), and the specific cost element (labor, material, or subcontracts) can usually clue the auditor to the type of risk involved. Another important consideration is the contractor's prior history of doing business with the government.

Conducting a rigorous evaluation of the contractor's data allows the DCAA auditor to get a much better understanding of the contractor's business environment, and increases the level of assurance offered by the auditor's opinion.

When performing an audit, there are two significant components working in unison: quality and timeliness. Increasing the quality of the audit report requires strict adherence to GAGAS as well as increasing the level of documentation effort and testing. Conversely, an increase in quality often has an inverse effect on timeliness due to the increased level of effort. Timeliness is defined by the auditor and customer in determining the desired dates for audit completion, but more importantly ensuring those dates are realistic and achieving them.

DCAA has made an aggressive effort to reach out to the acquisition community to better understand their challenges and concerns. During 2012, DCAA executives made regular visits with industry officials, buying commands, and attended conferences, to discuss issues related to all parties' expectations and perspectives. This practice will be implemented in 2013 and beyond.

## 5. Recent Criticisms

As noted in *Defense News* (Chacko, 2012), “the Defense Contract Audit Agency conducted 7,390 audits in 2011.” The 7,390 is less than a third (26,623 audits) performed six years ago. Ms. Chacko goes on to mention that audits of the Pentagon’s contractor costs “have slowed to a trickle in recent years, prompting critics to charge that billions of dollars in questionable costs are likely being paid but not flagged by auditors.” She believes the dramatic slowdown occurred even as the agency has ramped up hiring in the same period by about 20 percent.

According to her, “one result of the slowdown: a daunting \$573 billion backlog of contracts stretching back six years that have already been paid but still await auditing. Six years ago, the backlog figure was \$110 billion, less than one-fifth of the current size.”

In his vigorous defense of the agency, Mr. Fitzgerald, wrote a letter to the editor (*Federal Times*, 2012). In his reply, Mr. Fitzgerald mentioned that the editorial failed to discuss a few very key points that provide a more accurate picture in terms of the agency’s effectiveness and productivity.

The two keys points quoted from Mr. Fitzgerald were:

- 1) “you imply that our performance standard should be the number of audits DCAA was completing at the time it was criticized by the Government Accountability Office. This just isn’t where our agency needs to be.”
- 2) “DCAA’s performance of more audits does not automatically result in more savings. In reality, the amount of net savings is one of the most tangible benefits of our audit work.”

The driving point to Mr. Fitzgerald’s argument is that “choosing the right audits and doing them comprehensively is more effective and beneficial than simply completing more audits. For example, in fiscal 2003, we examined \$265 billion, questioned \$8 billion (3 percent) of costs and issued over 29,000 audit reports. In fiscal 2011, we examined \$128 billion, questioned \$11.9 billion (9 percent) of costs and issued about 7,000 reports. Although we issued about 75 percent fewer audit reports and examined fewer dollars, we questioned more costs on a percentage basis.” Simply put, auditing

higher risk proposals where the estimated costs are in the hundreds of millions of dollars will result in an increase in net savings.

At some point, DCAA's leadership had to make some difficult decisions. By using a risk-based approach, it allows for the best use of DCAA's resources on audits with the highest return for its efforts. Mr. Fitzgerald made the decision to focus on higher payback audits. While he believes this was the right decision, it resulted in a large backlog of incurred-cost audits.

It is also important to stress here that over the past several years, the agency has been faced with contractor's submission packages that were inadequate at best. For example, the contractor is required to submit their forward pricing proposals using the guidelines established in FAR 15 and specifically in, Table 15-2 (Appendix A). It's not uncommon that contractors will exclude a properly detailed bill of material (BOM) in their submission. Since the BOM is a required document in the proposal, DCAA has no choice but to return the proposal back to the contractor. This ultimately creates a major delay in performing the audit and creates havoc in the contracting officer's scheduling for potential negotiations.

In March 2010, Loeb (Loeb, 2010) wrote an article entitled "GAO vs. DCAA - And the Winner Is? Contractor!" In May 2012 (Loeb, 2012), he wrote another article entitled "DCAA – Is Anyone Home?"

The March 2010 article discusses the major findings the GAO found during its investigation into DCAA's management of "inappropriately removing audit findings from audit reports." According to the article, the root causes of the DCAA issues during this time were:

- inadequate working paper documentation,
- insufficient transaction testing,
- independence, and
- management abuse.

Only the first two issues will be mentioned here. In the former case, it was mentioned that when the auditor was faced with a decrease in budget (the amount of time

to complete an audit) the first area impacted was the amount of documentation made in the work paper package. In the latter case, the GAO reported that DCAA was not properly performing transaction testing even though the DOD IG's office gave DCAA a clean opinion.

The initial differences GAO had with DCAA now became a tug of war between the GAO and the DoDIG's office. If in the past DCAA performed its audits to the specifications of the DoDIG and passed, then why now did the GAO have issues with the way DCAA was performing its audits? Apparently, the GAO may have more stringent interpretation of the auditing standards than the DoDIG and DCAA. As it turns out, the difference between the GAO and the DoDIG's opinions may focus on the interruption of the GAGAS. See below.

In the May 2012 article Mr. Loeb discusses the decline in DCAA audits even though the agency continues to hire more auditors. It is similar in nature to the article written by Ms. Chacko, however, he does go into detail about GAGAS. As Mr. Loeb pointed out with respect to audit documentation and internal reviews of working papers, DCAA may be "going overboard on complying with GAGAS." If DCAA is going to perform audits that add value, are timely, and provide the contracting officers with information that is relevant to their work, then the GAO, DoDIG, and DCAA must work together to resolve the GAGAS compliance issues.

## **6. Office of Personnel Management Surveys**

As noted in Mr. Fitzgerald's Overview (DCAA, 2012), the agency in 2012 showed significant improvement in employee satisfaction based on the annual survey conducted by the Office of Personnel Management (OPM). This survey provided a snapshot of employees' perceptions of whether or not success was a characteristic of their organization. Of the 84 total questions, DCAA employees gave higher ratings (85 percent) for 71 of the total questions. This was better than the rating provided in 2011. Mr. Fitzgerald was particularly pleased with the answers to the following categories:

- Leadership
- Supervision / Team Leader

- Work Experience

It is important to realize that in past surveys, DCAA was criticized in the areas mentioned above. Mr. Fitzgerald stated that these areas are essential for the overall workforce satisfaction and critical to the Agency's overall success in the future.

## **7. Command Feedback Initiatives/DCAA's Challenges in Supporting Customers**

In order to improve communication, quality, and the working relationship between DCAA and the buying commands, DCAA initiated the Command Feedback Initiatives (CFI). Specifically, the CFI is a survey sent out to the buying commands that DCAA provides its services to. In order to improve its services, it is essential to hear directly from DCAA's customers the areas they feel DCAA is doing very well in and at the same time, areas where DCAA needs to improve. The CFI is a series of probing questions asking the commands if DCAA's products such as its audit report provided the following:

- received in a timely manner
- was the report useful
- did it provide enough detail
- was it responsive to the request
- was there adequate communication between the auditor and requester
- if additional services were provided by DCAA, was the requestor satisfied
- was the customer satisfied overall with DCAA's quality of work
- what additional services can DCAA provide to the command

We obtained and reviewed copies of DCAA CFIs covering a period from 01 October 2011 to 31 March 2012 (See Appendix B). The first set covers Calendar Years (CY) 2008 through 2011 and was divided in six-month increments (01 January 2008 to 30 June 2008 and 01 July 2008 to 31 December 2008). During this timeframe, the following five-digit assignment codes were included in the universe:

17100 = Termination audits (Fixed and Cost Type)

17200 = Claim Audits

1774X = Pre-Award

21000 = Price Proposals

22000 = Integrated Product Team (IPTs) are no longer performed by DCAA

23000 = Forward Pricing Rate Proposals

270X0 = Cost Element or Cost Realism audits

28000 = Application of Agreed Upon Procedures.

For assignment numbers 21000 and 270X0, 100 percent of the high risk proposals were selected for review. Additionally, 10 assignments covering the same assignment codes were selected for non-high risk proposals and 15 assignments were selected for assignment code numbers 17100, 17200, 1774X, 22000, 23000, and 28000. Table 2 provides a summary of the sample strata.

#	Assignment Type	Assignment Universe	Number of Assignments Selected
1	High Risk Proposals - Cost Type	12	12
2	High Risk Proposals - Fixed Price	64	64
3	21000 Non High Risk	281	10
4	27000 Non High Risk	180	10
5	27010 Non High Risk	31	3
6	23000	211	15
7	28000	10	2
8	17740	139	15
9	17741	255	15
10	17100	62	9
11	17200	26	4
	Total	1,271	159

Table 2. DCAA Assignments Selected for Review

Appendix B summarizes the nine survey questions in which the various DCAA customers were requested to answer:

**Question 1**, Timely receipt of audit report: The high point was an average of 97% in CY 2008. The low point was an average of 57% in CY 2011. The decline in audit report timeliness aligns exactly with the 2009 GAO report on DCAA (GAO, 2009).

**Question 2**, Usefulness of the audit report: DCAA scored an average of 97% for CYs 2008 to 2011. We noted, however, that “usefulness” was not defined, and may be limited to the table of questioned rates provided in the final audit report.

**Question 3**, Audit report sufficiently detailed: DCAA scored an average of 97% for CYs 2008 to 2011. We noted here that “sufficiently detailed” from the requestor’s perspective and “sufficiently detailed” from the GAGAS perspective are not congruent.

**Question 4**, Audit report responsive to each item in the request: DCAA scored an average of 97% for CYs 2008 to 2011.

**Question 5**, Customer suggestions for improving report’s usefulness and/or presentation: DCAA scored an average of 11% for CYs 2008 to 2011. The low response rate suggests that DCAA’s customers did not have suggestions.

**Question 6**, Communication between Field Audit Office (FAO) and customer sufficient: DCAA scored an average of 94% for CYs 2008 to 2011. Based on this statistic, DCAA is doing very well in communicating with its customers. As discussed in DCAA’s Contract Audit Manual (CAM) (Chapter 1–400), as an “audit and financial advisor to procurement and contract administration activities, auditors must understand and support the services needs of these organizations.” The agency is committed to “providing timely and responsive services and will maintain communications and liaison services sufficient to continuously assess if customer needs are being met.”

**Question 7** is a two-prong approach. Part A asks if the customer requested additional assistance and Part B asks if so, the customer was satisfied.

**Question 7a**, customer requested additional assistance after issuance of report (e.g., attendance at negotiations): DCAA scored an average of 22% for CYs 2008 to 2011. In 22% of the time, additional assistance was requested and conversely, in 78% of the time, assistance was not requested. The 78% may indicate the customer not inviting the DCAA auditor(s) to attend negotiations. As stated in CAM, Chapter 15–402 (Auditor Attendance at a Negotiation Conference), “in routine audits, auditor availability for negotiations will be presumed.” The primary advantage for the auditor to attend negotiations especially if the acquisition is complex and high dollar; is to assist the contracting officer in negotiating a fair and reasonable price. Since the auditor performed



the audit and has detail information with respect to the proposed cost elements, he or she is in a very desirable position to explain the contractor's methodology for proposing the costs.

**Question 7b,** If so, was the customer satisfied with the additional services? DCAA scored an average of 89% for CYs 2008 to 2011. Although this score is relatively high, the customer must do a better job in requesting DCAA assistance at negotiations.

**Question 8,** Was the customer satisfied with the overall quality of work? DCAA scored an average of 98% for CYs 2008 to 2011.

**Question 9,** Additional services DCAA can provide? DCAA scored an average of 10% for CYs 2008 to 2011. This was also a low response rate. In further researching this question, as a follow up to the first half of CY 2011 CFI results, some of the customers had the following comments:

- Be more proactive in assist audit follow up. DCAA needs to realize that their definition of impartiality (independence) is rendering them independently ineffective. DCAA seeks perfection and has no sense of urgency (BAE Rockville Resident Office (RO), Audit Report No. 6281-2011U21000001, dated 20 January 2011).
- There is a need for forward pricing rate agreements covering both direct and indirect rates and cost of money factors (St. Louis Branch Office, Audit Report No. 3201-2011H27000001, dated 6 May 2011).
- Better teamwork and communication efforts in cases of contractor delays (General Dynamics land Systems Resident Office, Audit Report No. 2271-2010P27000004, dated 9 February 2011).
- Getting involved with DCAA at the beginning of the process (Maricopa Branch Office (BO), Audit Report No. 4821-2010R21000030, dated 8 February 2011).
- Lower DCAA staff movement (South Bay Branch Office, Audit Report No. 4421-2010E2700000S1, dated 29 October 2010).

The areas in need of improvement related to Fieldwork included:

- Customers not being invited to the exit conference. The results showed that 69% of the customers were not invited to the exit conference.
- Audit report due dates were only met 50% of the time, even with multiple requested extensions.
- For walkthroughs, only 56% of the customers were invited.

- For audit report due date agreement, only 77% of the customers were satisfied.
- For timely audit request acknowledgment, 81% of the customers were satisfied.

On a scale of five (five is highest), the two areas where DCAA scored highest were in:

- Proposal walkthrough, a score of 3.9 out of 5.0 was achieved.
- The benefit of attending the exit conference, a score of 3.3 out of 5.0 was achieved.

The survey also provided results for Audit Report Questions. The area identified as needing improvement was audit report responsiveness. Issues identified were:

- Timeliness issues.
- The lack of responsiveness “seriously hindered” the customer’s ability to negotiate in a timely manner.
- The audit report was no longer valid since it was received too late in the acquisition process, thus could not be used to prepare for negotiations.

The areas in need of improvement related to Post-Report Questions included:

- The customer did not invite the auditor to negotiations 75% of the time.
- When the auditor was invited to negotiations, it was only 57% of the time.

The results by audit type showed that for assignment number 23000 (FPRP), the following issues need to be addressed:

- Timely acknowledgements
- Walkthroughs
- Notification of deficiencies
- Due date coordination
- Meeting the agreed to due dates
- Inviting the requestor to the exit conferences
- Auditors being invited to negotiations
- Overall satisfaction

The results by command showed the following:

- The highest ratings went to the Army Contracting Command (ACC)-Redstone and United States Transportation Command (USTRANSCOM).
- The lowest rating went to DCMA since one-half of their assignments were 23000s.

For 23000 assignments, timeliness and communication are again the two most important ingredients.

The table included in Appendix B covers CYs 2008 to 2011 and provides some interesting statistics especially for questions 1 (timeliness), 2 (usefulness of the audit report), 3 (audit report sufficient in detail), 4 (audit report responsiveness to the items requested), 6 (the effectiveness of communication), 7a (additional audit assistance after audit report issuance), 7b (if yes to 7a, customer satisfaction), 8 (customer overall quality satisfaction), and 9 (additional DCAA services).

## **8. Summary**

As mentioned above and stressed in Mr. Fitzgerald's strategic plan, communication must be done throughout the entire audit process as well as after the audit report has been issued. In the latter case, proactive communication with the requestor is extremely important. If the requestor is confused about an issue addressed in the audit report, the auditor can easily remedy the situation

Overall, the following areas need improvement if DCAA is going to be relevant and not a commodity:

- Need improvement coordination of a mutually agreeable report due date with the requestor and meeting that date. This is where communication is the key component. The requestor and the auditor must communicate so that a reasonable due date is attainable. Promising a due date that is unrealistic could create issues later in the audit performance of a particular assignment.

## **B. DEFENSE CONTRACT MANAGEMENT AGENCY**

### **1. DCMA Responsibilities and Primary Function**

Whereas the DCAA is responsible for providing audit and financial support to the commands, the DCMA like DCAA, is an independent agency responsible for providing a wide range of acquisition management services for commands located both domestic and abroad. Specifically, DCMA's authority spans to more than 324,000 prime contracts being performed at more than 18,500 contractor locations. According to DCMA's website, the agency manages contracts in excess of \$1.963 billion, and manages more than one million financial transactions annually to authorize disbursement of approximately \$155 billion.

DCMA is the DOD component that works directly with contractors to ensure that contracted DOD supplies and services are delivered on time, on cost, and meet all specified performance requirements. DCMA staff serve as "information brokers," or on-site representatives for the DOD buying commands throughout the acquisition life cycle. As published on DCMA's public website, its services consist of two phases:

***Before contract award**, DCMA provides advice and information to help construct effective solicitations, identify potential risks, select the most capable contractors, and write contracts that meet the needs of our customers in DOD, Federal and allied government agencies.*

***After contract award**, DCMA monitors contractors' performance and management systems to ensure that cost, product performance, and delivery schedules are in compliance with the terms and conditions of the contracts.*

Although DCMA provides expertise in areas such as quality assurance, cost, schedule, and supply chain endeavors, the agency is concerned with losing their skill set in these areas. As part of their vision statement, the agency is focused on rebuilding and

developing new capabilities within their core technical expertise. To accomplish this, DCMA is emphasizing the areas of quality assurance and supply chain management. For example,

- In quality assurance; ensuring delivery of quality products and services to the warfighter and in
- Supply chain management, gaining an understanding of the risks and delivering that information to their customers so they can make smart decisions.

## **2. DCMA Challenges**

As with any organization, success depends on strategic objectives/challenges facing it. According to the DCMA website, after a comprehensive evaluation of their current environment and an analysis of future trends, their Strategic Plan identifies and addresses four important challenges faced by the organization.

- Loss of people: DCMA has lost more than 50 percent of its people since 1990, yet workload has risen by more than 25 percent. Their recruitment efforts have not kept pace with their hiring needs.
- Erosion of skills: Between workforce reduction and lack of investment in maintaining their technical edge such as training, enhancing skills and implementing new process controls, they have fallen behind the curve in their core contract administration competencies.
- Efficient use of agency resources: There is an obligation to increase efficiency in everything they do. Therefore, DCMA must find ways to better align their agency organizations and systems to more effectively deliver high value services to their customers.
- Increased customer demand for specialized skills: DCMA is being asked to expand their analytical capabilities in areas such as Pricing, Earned Value Management (EVM), and Supply Chain Management (SCM). In addition, DCMA has assumed an increased role in support of military operations in-theater. The agency is not currently equipped with the skills or resources to meet these increased demands.

### **3. DCMA's Strategic Plan**

DCMA's Strategic Plan incorporates several key perspectives that will be briefly discussed in this section. These perspectives incorporate three components: 1) Agency end goals, 2) Agency Strategic Priority, and 3) Agency Initiatives consisting of many factors. Here are a few of them.

#### **I) Acquisition Customers**

- a. Agency's End Goal: DCMA's end goal is to ensure their acquisition customers receive excellent contract services and relevant information to make sound business decisions.
- b. Agency's Strategic Priority: deliver quality information to the buying activities through vigorous financial, industrial and supply chain analysis.
- c. Agency's Initiatives:
  - i. Improve DCMA's performance as the DOD's Executive Agent for Earned Value Management Systems.
  - ii. Continue to build Manufacturing and Supply Chain Management core competency.
  - iii. Develop a system allowing for timely, accurate, and predictive business information of contractor capabilities across all DCMA contracts and customers.
  - iv. Develop a better way of measuring customer satisfaction.
  - v. Execute their expanded mission for Contingency Contract Administration Services (CCAS) more effectively and efficiently.

#### **II) Policies and Processes**

- a. Agency End Goal: effective policies and procedures ensuring delivery of consistent and cost effective contract administration services.
- b. Agency Strategic Priority: promulgate policy and process guidance.
- c. Agency Initiatives:
  - i. Develop a plan to effectively rebuild and execute quality assurance capabilities through improved policies, processes, and tools.

- ii. Develop a plan to effectively execute engineering analysis capabilities through improved policy, processes and tools.
- iii. In combination with buying commands and DCAA, develop a concept for the agency's future role in contract pricing that eliminates duplicate efforts.
- iv. Establish agency Lean Six Sigma (LSS) Program Office to enhance agency operational performance and ensure common approach on LSS projects.

### **III) Human Capital**

- a. Agency End Goal: Develop a highly skilled workforce capable of executing current and future missions.
- b. Agency Strategic Priority:
  - i. Grow and retool the workforce through a strong intern program, increasing external recruitment, and relying on internal development.
  - ii. Enhance leadership skills across the agency and ensure the workforce at all levels, has access to and fully understands available opportunities to develop and improve these skills.
- c. Agency Initiatives
  - i. Attract, recruit, develop, and retain a high-performing and diverse workforce.
  - ii. Deliver effective technical training and foster a culture of mentorship across the workforce.
  - iii. Revitalize DCMA's leadership development for both civilian and military personnel.

### **IV) Management**

- a. Agency End Goal: an organization with roles, responsibilities, and management controls that are well defined and fully aligned to effectively and efficiently manage public resources.
- b. Agency Strategic Priority: Ensure the efficient use of agency resources.

c. Agency Initiatives:

- i. Develop and execute short and long-range resource planning and analysis of resources needed to support the workload.
- ii. Promulgate policy to enhance mission performance.
- iii. Continue to improve management controls on financial management systems, audit readiness, and improve access to timely financial management information.

**4. DCMA's Customers**

DCMA is under DOD's Under Secretary of Defense (USD) for Acquisition, Technology and Logistics (AT&L). Other reporting entities include: 1) the Missile Defense Agency, 2) Defense Logistics Agency and 3) the Defense Acquisition University.

The USD (AT&L) is the principal staff assistant and advisor to both the Secretary of Defense and the Deputy Secretary of Defense for all matters concerning acquisition, technology and logistics.

**5. Recent Criticisms**

A central theme in this paper has focused on the independent responsibilities of both DCAA and DCMA. As previously noted, these agencies are tasked with different missions. However, in recent years the higher-ups in the DOD have attempted to shift some of the audit duties from DCAA to DCMA. This topic was part of a DoDIG report issued on 13 November 2012 (DoDIG, 2012).

In their report, (DoDIG, 2012), the DoDIG evaluated the actions taken by DOD officials to align DCAA and the DCMA functions by increasing the dollar thresholds a contractor's proposal must meet before the contracting officer can request a DCAA audit. Currently and based on DFARS' (PGI 215.404-2c), the minimum threshold for a DCAA audit is:

- Fixed-price proposals exceeding \$10 million;
- Cost-type proposals exceeding \$100 million.



If the dollar values are below the amounts shown above, then DCMA is to perform the audit. This shift in DCMA performing the work of DCAA has created a major concern addressed in the report.

Specifically, in “Finding B” of this report, the DoDIG documented that DCMA’s cost analysis “does not demonstrate that the DCMA cost analysts performed work sufficient to determine a contractor’s proposed cost and fee.” As required by FAR 15–404.1(a), this analysis refers directly to determining a fair and reasonable price of a contractor’s proposal.

The DoDIG report also mentioned that the Office of Defense Procurement and Acquisition Policy (DPAP) had been working with DCMA to “create a world-class pricing organization and believed DCMA was in a position to adequately perform the additional contracting officer requests.”

However, in the study, the IG evaluated the cost analysis performed by DCMA at three of its Contract Management Offices (CMO). The criteria used by the IG was DCMA’s Instruction Folder Number 22 (Pricing and Negotiations – Contract; this is DCMA’s policy on the procedures used to perform cost analysis) and the guidelines included in the FAR.

Covering the period from 17 September 2010 through 31 March 2011, the three DCMA CMOs performed cost analysis on 13 contractor proposals submitted with cost or pricing data. Based on the IG’s checklist which is included in the DoDIG’s report but not in this paper, the IG determined that in 13 of 13 cases (100 percent), the DCMA cost analysis did not demonstrate compliance with FAR or DCMA’s own Instruction Folder 22. The IG report further stated that the DCMA CMO:

- Does not provide evidence that the work was performed
- Does not demonstrate how the cost analyst applied the various cost analysis techniques as stated in FAR 15.404-1(c) (2). The goal here is to determine a fair and reasonable price.
- Does not demonstrate the actions taken by the cost analyst properly determined if the contractor submitted current, accurate, and complete cost or

pricing data with its certified proposal in accordance with the Truth and Negotiations Act (TINA)

- Does not demonstrate that the cost analyst determined if the contractor was in compliance with FAR Part 31 with regard to contracts, subcontracts, and modifications for negotiations.
- Does not demonstrate that the cost analyst determined if the contractor was in compliance with the Cost Accounting Standards (CAS)

In the 13 cases reviewed by the DoDIG, seven of those cases found that when technical evaluations were performed alongside the cost analysis, the evaluators did not follow the guidance in FAR 15.404-1(e)(2), Technical Analysis (GAO, 2009).

The report mentions that DCMA also performed their own review of 15 additional CMOs using the same checklists that the DoDIG used. DCMA had noted that their findings were consistent with the DoDIG. As a result, DCMA had initiated corrective action to update their Pricing and Negotiation Instruction, standardize the cost analysis and technical support case file, and improve training.

## **6. Relationship with DCAA**

DCAA and DCMA are separate agencies with their own unique mission statements; however, both agencies also have 11 areas of functional overlap (Ramirez, 2012). This overlap creates an environment of inefficient application of DOD resources.

The functions of both DCAA and DCMA are referenced in FAR Part 42 and DFARS Part 242. As noted in Ramirez, confusion has grown about the both agencies' role in performing these functions. Since the acquisition community is growing impatient with both agencies with respect to this confusion of overlap, there is also an increase in duplicate data requests to contractors. Essentially, since the administrative contracting officer (ACO) receives their "instructions" from the procuring contracting officer (PCO), requests for the same type of services may be forwarded to both agencies.

The 11 areas of overlap mentioned above are summarized below:

1. Purchasing System
2. Forward Pricing Rate Agreements (FPRAs)

3. Contracting Pricing
4. Financial Analysis
5. Material Management
6. Insurance
7. Pensions
8. Cost Account evaluation
9. Final Overhead Rates
10. Form 1s \*
11. Earned Value Management.

\* DCAA auditors as stated in the DCAA Contract Audit Manual (CAM – Section 6–900), are responsible for notifying the ACO when there is a suspension and/or disapproval of costs under cost reimbursement contracts. The mechanism for this notification is issuance of DCAA Form 1.

As previously mentioned, the acquisition community was not the only audience confused about the agencies' roles. The Commission on Wartime Contracting in Iraq and Afghanistan (Chacko, 2011) and the defense industry associations have also expressed their concerns. To further compound the problem, the taxpayer as well as the warfighter—the two most important stakeholders—would not be well served by the duplication of government effort. Other stakeholders include DCAA and DCMA as well as the entire DOD, the defense contractor industry and finally the DoDIG, GAO, and Congress.

In Ramirez's (2012) opinion, the primary cause of the overlap stems from DCAA's emphasis on maintaining its independence as the DOD's professional audit agency. Specifically, if the aforementioned stakeholders are going to depend on DCAA audits, then DCAA must be able to demonstrate that their audits are based on GAGAS. As mentioned above, one of the chief tenants of GAGAS is independence. In order for DCAA to accomplish its audit mission, the agency must operate without undue influence from other parties such as DCMA, the ACO/PCO, and the contractor. In the past, DCAA often participated in joint DCAA/DCMA meetings to discuss risk and audit priorities, changes in disclosure statements, and assessing the contractor's incurred cost claim

submission. As a consequence of the GAO report (GAO, 2009) adversely affecting DCAA's independence and performance, these coordination meetings no longer exist.

Historically, the contractor would submit the rate proposal package for DCAA audit. Once the auditors performed the audit and issued their report to DCMA, the latter would also be involved in analyzing the rates and comparing the proposed to actuals and other historical data. Once DCMA completed their analysis, the two agencies would meet to discuss their results and the final product would now be presented to the contractor for negotiations. Once negotiations were concluded, the forward pricing rate agreement (FPRA) would be established for both the government and the contractor's use on all forward pricing proposals.

However, due to DCAA's "independence," FPRAs are handled independently of DCMA's effort. In short, the audit of the contractor's proposed direct labor rates as well as their indirect rates and cost of money factors are completed separately. If DCMA issues forward pricing rate recommendations (FPRR), DCAA cannot opine on them until their audit is completed and goes through the various management layers of approval before the report is finally issued. In the meantime, both the government and the contractor are losing valuable time.

Compounding this very difficult situation is a GAO report (GAO, 2009) and the Carter Memorandum (Carter, 2010). The following, taken from the Ramirez's (Ramirez, 2012) paper offers some alternatives to alleviating the problems mentioned so far.

As with any recommendation, there are pros and cons. One suggestion is for the senior leaders of both agencies to address the overlaps and direct cooperation between the two. The advantage of addressing these overlap concerns is to document their roles, minimize organizational impact, and increase timeliness/effectiveness. The disadvantage is the difficulty in forging a new workplace culture. Will the employees be able to incorporate new responsibilities and act as team players so that the mission is accomplished on time, with reduced extra work, and outstanding quality?

## **C. AIR FORCE SPACE COMMAND**

### **1. Responsibilities and Primary Function**

SMC, located in El Segundo, CA, is part of the overall Air Force Space Command (AFSPC) headquartered at Peterson Air Force Base, Colorado. AFSPC provides military space and cyberspace capabilities with a global outreach to the joint warfighting team.

According to SMC's website, SMC has the unique responsibility of developing, acquiring, fielding, and sustaining the world's best space and missile systems for the warfighter and our nation. Air Force, AFSPC, and SMC's mission is to deliver space and missile capabilities to America and its allies. Their vision is to be America's space leader.

The following provides a brief background of the eleven directorates making up SMC:

1. Global Positioning System (GPS) Directorate: is responsible for development, launch and sustainment of the Global Positioning System, the world's premier navigation and timing standard.
2. Space Superiority Systems Directorate (SY): is responsible for equipping the joint warfighter with both offensive and defensive counterspace, space situation awareness and special access required capabilities required to gain, maintain and exploit space superiority.
3. Launch and Range Systems Directorate (LR): provides DOD and the National Reconnaissance Office with assured access to space through launch systems modernization, sustainment and development of worldwide range capability for all national security missions.
4. Space-Based Infrared Systems Directorate (SBIRS): develops, deploys, and sustains surveillance satellites and ground stations to detect, track, and report global and theater ballistic missile attacks against the United States, its allies and combat forces.

5. Defense Weather Systems Directorate (DWSS): equips worldwide strategic and tactical forces with weather and space environmental data for planning and executing aerospace, ground and naval operations.
6. Military Satellite Communication (MILSATCOM) Directorate: plans for, acquires and sustains space-enabled global communications in support of the president, secretary of defense and combat forces.
7. Space Logistics Directorate (SL): sustains and modifies worldwide USAF/DOD space weapon systems to include terrestrial and space weather, global positioning systems, launch range control, satellite command and control, secure communications, and missiles early warning.
8. Missile Defense Systems Division (MDS): its mission objectives include developing space technologies that support the Missile Defense Agency's space assets. These technologies include sensors, space qualified components, optics and algorithms.
9. Space Development and Test Directorate (SDT): serves as primary provider of launch, spaceflight and on-orbit operations for entire the DOD space research and development community.
10. Spacelift Range and Network System Division (SRN): is responsible for modernizing and sustaining the world-wide Air Force Satellite Control Network as well as the nation's Launch and Test Range System located at Vandenberg AFB, Calif. and Cape Canaveral AFS, Fla.
11. Contracting Directorate (PK): is responsible for providing comprehensive advice and effective contract management to the space community and for the timely execution of acquiring superior weapon systems.
  - a. There are several elements that fall under PK. These include:
    - i. Contract Price/Cost Analysis which is responsible for providing acquisition pricing support for highly complex, high monetary value, and long term acquisitions for major weapon systems.

- ii. Contract management which is responsible for contract distribution, competition, contract closeout, on-orbit incentives, protests, warranties, and Freedom of Information Act (FOIA) concerns.
- iii. Resource management: is responsible for training, personnel, and awards.

## **2. Ties to DCAA and DCMA**

In addition to the military and civilians who work in these directorates and divisions; SMC is also staffed by DCAA Financial Liaison Advisors (FLAs) who also provide accounting and auditing services to the base. Some of their responsibilities (DCAA/FLA, January 2013) are:

- Improve coordination and establish ways to identify, evaluate, and resolve issues
- Facilitate DCAA's ability to provide quality, timely and responsive audit and assurance services
- Facilitating attendance of field auditors at negotiations when an audit report has been issued

DCMA also has a staff assigned to the base. This individual is an engineer by profession and provides some of the following services:

- Serves as the DCMA Customer Liaison Representative (CLR) to a major Military Service or Defense Logistics Agency (DLA) buying activity that is the proponent for multiple, high-dollar DOD weapon systems, logistics and support contracts.
- Functions as the primary representative of DCMA to the customer organization where the following key areas of responsibility may be applicable:
  1. Monitors and evaluates customer satisfaction with DCMA pre- and post-award contract management support and connects customer with appropriate part of the DCMA enterprise to resolve customer issues.

2. Applies analytical and evaluative techniques to the identification, consideration, and resolution of systemic customer issues or problems with DCMA products or services.
3. Actively promotes, and may be a direct participant in, Acquisition Planning and Support Services (APSS) activities. Interfaces with military service Senior Acquisition Executives (SAEs), Program Executive Officers (PEOs), and Program managers (PMs).
4. Responds to customer inquiries and concerns and serves as a conduit of information between the customer and various DCMA field activities.

The last part of this section will address the results of a Spring 2012 meeting (SMC Meeting, March 2012) between various SMC directors and members from both DCAA and DCMA. This open forum's purpose was to address the concerns SMC had regarding DCAA and DCMA's performance. The following is a summary of the concerns, issues, and opportunity for improvement. We have paraphrased their comments, below. Not all of the directorates provided input.

**Directorates who provided input:**

1. Global Positioning
  - a. Concerns: Not applicable
  - b. Issues: Needs DCMA's assistance in signing off on the DD 250 forms
  - c. Opportunities for improvement: Not applicable
2. Space-Based Infrared Systems
  - a. Concerns: Limited resources to cover both DCAA and DCMA's review and expertise
  - b. Issues: DCAA and DCMA needs to improve their assistance with Should-Cost Reviews and validation of Life Cycle Cost Database
  - c. Opportunities for improvement: DCAA and DCMA have done well to prioritize and communicate concerns with meeting the directorate's expectations



3. Contracting Directorate: Addressing DCAA.
- a. Concerns: The various program offices tailor the audits in order to adequately address the specific areas that require more attention to support negotiations. There is a lack of DCAA presents when a systems audit is incomplete. Without timely audit support, the price negotiation team is unable to confidently support execution of program requirements at a level of fidelity that protects the taxpayer. The various contractors are able to utilize new rates under the auspice that DCAA is too slow to evaluate the rates thus leaving the Government without options to compare the rates and determine cost reasonableness.
  - b. Issues:
    - i. DCAA has failed to provide tailored audits when requested.
    - ii. System audit and disclosure statements are not being readily audited as more resources are diverted towards negotiations.
    - iii. Audit completion timeliness is still a significant issue and does not seem to improve with the recent DCAA implemented changes.
  - c. Opportunities for improvement:
    - i. There must be increased communication between DCAA and the various program offices so that both parties can explain the requirements for tailoring audits prior to initiating changes on audit requests.
    - ii. Allocate additional resources to continue thorough system audits and disclosure statements.
    - iii. DCAA should keep a metric system that tracks audit requests and is readily available to the program offices to track successful progression and allow transparency.

- iv. Initiate stricter guidance on proposing new rates to the Government when dealing with Forward Pricing Rate recommendation (FPRRs).
- 4. Contracting Directorate: Addressing DCMA.
  - a. Concerns:
    - i. Contractors such as Northrop, Boeing, and Lockheed require such a large threshold to facilitate review that rate support is not often provided for potential contracts of <\$200 million.
    - ii. Contracts are not being developed in a manner that would allow administrative ease to ensure protection of Government property.
  - b. Issues:
    - i. Potential contracts of <\$200 million are still considered high magnitude and therefore still requires DCMA's attention.
    - ii. Without administrative ease, there is a potential for unrealized efficiency gains.
  - c. Opportunities for improvement:
    - i. Devise a better application of the threshold when dealing with larger companies.
    - ii. DCMA should have a more active role in pre-award activities (i.e. Request for Proposal (RFP) development, the Solicitation Review Boards, negotiations, clause development) to assist in the administration of contracts and also ensure Government property is properly handled.
- 5. Space Superiority Directorate: Addressing DCAA.
  - a. Concerns:
    - i. FPRRs become outdated in such an expeditious manner that they prove to be unhelpful with pricing actions.
    - ii. DCAA is unresponsive when help is required.
  - b. Issues:

- i. DCAA guidance is unclear when FPRRs are going to be updated.
    - ii. Overall, SMC's concerns with DCAA are not being addressed.
  - c. Opportunities for improvement: Space Superiority did not have any listed opportunities.
6. Launch and Range (LR) Directorate: Addressing DCAA.
- a. Concern: DCAA audit timelines seem to be extremely excessive.
  - b. Issues:
    - i. DCAA audits take approximately  $\frac{1}{4}$  to  $\frac{1}{2}$  of the schedule from the RFP release to contract award. For example, a typical Evolved Expendable Launch Vehicle (EELV) Launch Services (ELS) contract mission takes approximately 11 to 12 months to get on contact. DCAA audit reviews have taken at least four months to complete and are a heavy schedule driver. There is a lot of pressure and frustration in that it takes a long time to complete these audits especially when there is pressure to award a contractual effort/mission in a shorter time.
    - ii. There needs to be flexibility with respect to DCAA and a "Quality Proposal."
    - iii. How will DCAA (and DCMA) deal with a commercial new entrant like SpaceX? This is especially challenging since FAR Part 15, certified pricing may not be applicable.
  - c. Opportunities for improvement: The directorate is willing to work with DCAA to be reasonable and help in reduce/compress their reviews.
7. Launch and Range Directorate: Addressing DCMA.
- a. Concern: Audits in support of the EELV Acquisition Strategy
  - b. Issue: The Air Force is contemplating a large lot buy for EELV. The Acquisition Strategy may have the Air Force buying five years of launches in FY13. This could generate a significant number of assist audits that will require DCAA and DCMA support.

- c. Opportunity for improvement: LR would like to continue working with DCAA and DCMA to ensure they are prepared for the surge in assist audit requests.

### **3. Space Command Challenges**

As this paper is currently being written, across the board cutbacks known as “sequestration” have taken effect. The DOD and its services have been mandated to reduce costs by a fixed percentage. The DOD simply cannot afford to conduct business as usual. One example of an ambitious effort to reduce costs comes from SMC.

In an article written in *Space News* (Fersten, May 2013), the Air Force Space and Missile Systems Center expects to save \$1 billion from its space acquisition portfolio over the next five years. This reduction will primarily come from reduced oversight of key programs.

According to Lt. Gen. Ellen Pawlikowski, commander of SMC, there are several satellite and launch programs that are currently being targeted for such reductions. The Advanced Extremely High Frequency (AEHF) secure satellite communication program is a prime example. Under a multibillion dollar contract, this program is anticipated to save more than \$600 million by purchasing five AEHF satellites from a single prime contractor—Lockheed Martin Space Systems, located in Sunnyvale, CA. These savings were generated by streamlining of the production flow and test schedule and reducing by nearly half the number of reports from 78 to 42 as required from Lockheed. Reductions in both the number of meetings on the program and the number of people who had to attend also were factors. As a result of these and other cost saving measures, the AEHF production times have been reduced from 73 months for the fourth satellite in the series to 63 months for the fifth. Finally, the funding documents for 2012 and 2013 show a large drop in projected funding for the evolutionary AEHF upgrades of about \$686 million.

Other satellite systems such as the Wideband Global Satcom communications system (transition from development to production), the GPS 3 satellite navigation system (still in development), and the Space Based Infrared System (SBIRS) have all benefitted from the application of these efficiencies.

The Air Force's largest program, in dollar terms, is the Evolved Expendable Launch Vehicle (EELV) program. Essentially, EELV is used to launch almost all operational U.S. military satellites. The prime contractor for the EELV effort is United Launch Alliance of Denver, CO which consists of a joint venture between Boeing and Lockheed Martin.

In order to reduce the exorbitant cost of launch activities, the Air Force has introduced competition into the mix. According to the article (Fersten, May 2013), the Air Force is within days of reaching an agreement with Space Exploration Technologies Corp (SpaceX) located in Hawthorne, CA. The plan is to certify SpaceX's Falcon rockets to carry the military payloads into space. The pair of satellites includes the civilian Deep Space Climate Observatory and the Space Test Program-2. Their missions are scheduled for 2014 and 2015, respectively.

#### **D. DEFENSE PROCUREMENT AND ACQUISITION POLICY**

This paper would not be complete without mentioning a third component to the auditing and acquisition management life-cycle, namely Defense Procurement and Acquisition Policy (DPAP). According to DPAP's website, DPAP is responsible for all contracting and procurement policy matters in the DOD. DPAP executes that policy through the timely update of the DFARS, PGI, and DOD Directive 5000.1&2.

In his 4 January 2011 memorandum (Assad, 2011), Mr. Shay Assad, Director, DPAP echoed the Under Secretary of Defense (USD) for Acquisition, Technology, and Logistics (AT&L) in a memorandum dated 14 September 2010, calling for better work alignment and reduction in Defense Contract Audit Agency (DCAA) / Defense Contract Management Agency (DCMA) overlap. Based on this memorandum, the Directors of DPAP, DCAA, and DCMA have committed themselves to the following actions:

##### **1. Increased Thresholds for Cost/Price Proposal Audits**

Although the threshold for DCAA on cost type proposal audits is greater than \$100M and fixed price proposals greater than \$10M, there is concern whether DCMA is

adequately prepared in both resources and training to perform audit functions that were inherently DCAA's to begin with, such as reviewing proposed contract rates.

## **2. Forward Pricing Rate Agreements (FPRAs) / Forward Pricing Rate Recommendations (FPRRs)**

DCMA will be the single agency responsible for issuing all FPRAs and FPRRs for contractors where DCMA is the cognizant contract administration office. In those cases where DCAA has completed an audit of the contractor's rates, then DCMA will adopt the DCAA recommended position.

At first glance, this sounds like the two agencies working in harmony, however, in order for DCAA to adequately provide DCMA with an audit opinion on the rates, it is absolutely imperative that the contractors start providing the cognizant DCAA office with adequate proposal packages and to immediately stop issuing audit packages that are not in compliance with FAR, DFARS, CAS, and other regulations. There have been many times where DCAA has needed to return the contractor's proposal rate packages because key data was missing. It would be both prudent and an effective use of resources to sit down with the contractor and review the guidance and regulations so that adequate packages will be submitted without delay.

## **3. Financial Capability Reviews**

To further increase their cooperative spirit, DCAA will no longer be performing these types of reviews, as they will be handled by DCMA. This is in accordance with FAR Part 9.106 and DFARS PGI part 209.106. DCMA has established a Financial Analysis Division under its Cost and Pricing Center to handle this added task.

## **4. Purchasing Systems Reviews**

Although DCAA is responsible for auditing the contractor's internal controls (including the purchase system), DCMA is now handling the function of conducting Contractor Purchasing System Reviews in accordance with FAR Part 44.3 and DFARS Part 244.3. DCAA's function will be to audit subcontract costs as part of its incurred cost audits and subsequently report any deficiencies in the contractor's system to the cognizant ACO for corrective action.

## **5. Contractor Business Systems Rule**

On 24 February 2012, the DOD (DFARS, 2012) published a final rule amending DFARS regarding contractor business systems. With only minor changes from the interim rule (effective as of 18 May 2011), the final rule provides for oversight of a contractor's business systems and empowers the government to withhold payments on contracts when a Contracting officer determines that a contractor's system contains "significant deficiencies." As defined, those "significant deficiencies" are a "shortcoming in the system that materially affects the ability of officials of the DOD to rely upon information produced by the system that is needed for management purposes." Once a significant deficiency is identified, the contractor must be promptly notified in writing and an evaluation process by the Contracting officer begins."

The final rule applies to all contracts governed by the Cost Accounting Standards (CAS) and regulates six categories of "business systems"—Accounting Systems, Estimating Systems, Earned Value Management Systems, Purchasing Systems, Material Management and Accounting Systems, and Property Management Systems. The regulation is implemented by a contract clause that, where inserted, allows the Contracting officer to withhold 5 percent of payments where there are one or more deficiencies in a single business system and up to ten percent if deficiencies are spread across multiple business systems. These business systems are monitored by both DCAA and DCMA.

## **E. SUMMARY OF THE ACQUISITION**

Regardless of how one chooses to divide up the responsibilities of the DOD acquisition process, as detailed on the acquisition "horse blanket chart" (Appendix C), the process relies on inputs from DCAA, DCMA and the DOD Buying Commands in order to bring required goods and services from the marketplace to the battlefield. Should one "leg" of the stool fail, the entire process is adversely affected, see Figure 1. While the three acquisition entities are, justifiably, separate organizations, their individual missions and outputs have created a situation where it is critical for these organizations to work together both efficiently and fluidly.

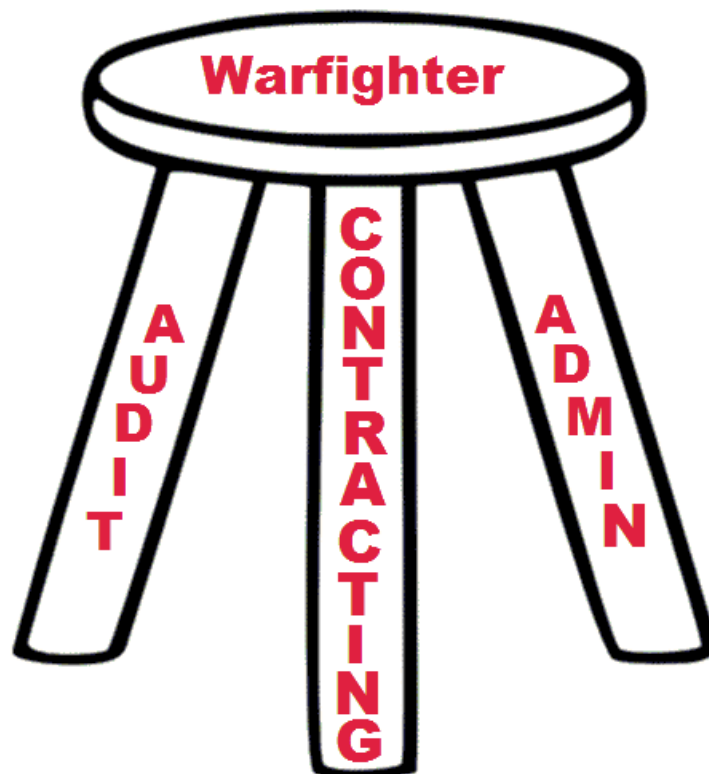


Figure 1. The Acquisition Community as a Three-Legged Stool

As an example of inter-agency teaming, both DCAA and DCMA have jointly sponsored the Cost Recovery Initiative (CRI) to aggressively target outstanding audit report actions. These actions are generally the result of contractor noncompliance with CAS and the successful resolution requires both agencies to tightly coordinate and teamwork between the auditor and KO. As mentioned in the Director's Year in Review (Fitzgerald, 2013), DCAA and DCMA have resolved nearly 500 of the approximately 700 audits originally identified as requiring resolution. This coordination resulted in the CO requesting that over \$600 million be returned to the U.S. Treasury.

It is apparent that the level of cooperation required among the DOD acquisition entities will demand a superior level of communication and process flow to incorporate all three entities.



### **III. RESULTS AND ANALYSIS**

#### **A. OVERVIEW**

On 30 April 2007 the Deputy Secretary of Defense (England, 2007), issued a memorandum to all Department of Defense entities establishing a program office within the DOD solely responsible for the tracking of Lean Six-Sigma processes within the DOD and calling for “aggressive implementation” of these processes “within all levels of DOD.”

Within the DOD acquisition community, we historically think of ourselves as members of independent agencies and/or commands. While this is true, we must change our frame of reference to think of ourselves as subsections of one common process- DOD Acquisition. Similar to a production line, items must pass through a number of stations on the figurative “production line” before they are fielded, from design to quality control to payment. In the spirit of the Deputy Secretary’s memo, and based on our research, we believe there is ample opportunity to fortify the “three legged stool” of DOD acquisition by applying lean six sigma principles on a macro-level, addressing the relationships across the three acquisition entities.

#### **B. LEAN SIX SIGMA PRINCIPLES**

As presented by the Naval Postgraduate School’s Mike Boudreau, (Boudreau, 2012), Lean Six-Sigma processes may be used within all business areas, and are not limited to simply physical production. Authors Braswell and Lichtig have evolved lean six sigma (LSS) from simply a “process,” applied within the constraints of a physical process, to a “theory” where by its principles may be applied to organizational relationships, such as the “three-legged stool” of the DOD acquisition community.

LSS theory aims to lower cost by streamlining operations and processes to create efficiency. Under “traditional” process improvement theory, organizations set up controls to detect and correct defects or errors. These organizations would then focus on creating uniform standards of conformance. In contrast, LSS theory focuses on redefining the business process itself, with the goal that defects, or “muda” (waste), are never created in

the first place. Former CEO of General Electric, Jack Welch, successfully implemented LSS at GE in 1995. Since that time, his story has become a textbook case study on the implementation of LSS processes. Successful implementation of LSS (George, 2004) follows the following steps:

1. **Define** and identify key business processes
2. **Measure** current performance levels, capabilities, customer needs and expectations
3. **Analyze** performance levels/trends and identify problems
4. **Improve** benchmark solutions, including a cost/benefit analysis
5. **Control** process variables, especially any exerting excess influence. Standardize processes and integrate into the system.

While LSS is most commonly applied to manufacturing processes where quantitative data can be collected and analyzed in real-time, we recognize that the DOD acquisition process does not operate at the same pace as a production line. That being said, we have also observed that LSS *theory* has been commonly and successfully applied to qualitative processes, such as in “Lean Accounting Systems.” The commonly stated goals (Braswell, 2004) for these more qualitative lean systems are:

1. To provide more accurate, timely, and understandable information. This serves to improve decision-making.
2. To eliminate waste from the business processes without yielding financial or internal control.
3. To maintain full compliance with applicable laws and regulations.
4. To provide information that is relevant and actionable.

Based on the authors’ research and experience, we have observed an opportunity for applying these lean principles to the DOD Acquisition process to serve as a force-multiplier and increase the efficiency and value of Acquisition operations.

### **C. DEFINE KEY BUSINESS PROCESSES**

As discussed in our “Literature Review” section (Chapter II), the DOD Acquisition process consists of three major DOD organizations—The buying command, DCMA, and DCAA. All non-commercial-off-the-shelf (COTS) items acquired by the

DOD must pass through a complex process that includes multiple inputs from each of these organizations. Consolidated and visually depicted on what is colloquially known as the “Horse-blanket Chart” (Appendix C), the Acquisition process includes five phases:

1. Materiel Solution Analysis Phase
2. Technology Development Phase
3. Engineering and Manufacturing Development Phase
4. Production and Deployment Phase
5. Operations and Support Phase

Each of these phases consists of an extensive amount of sub-activities and tasks, the total of which may take from a few months to several years to complete. Each phase concludes with a Milestone Decision Authority (MDA), where critical decisions must be made before the next phase can be initiated.

*Materiel Solution Analysis Phase* - As defined by DOD Instruction (DoDI) 5000.02 (Carter, 2013) the Materiel Solution Analysis phase is designed to assess all possible materiel solutions to the needs identified by the Joint Requirements Oversight Council (JROC) in order to meet the Nation’s National Defense Strategy. The Phase consists chiefly of an Analysis of Alternatives (AOA), guided by the Initial Capabilities Document (ICD), and focuses on identification and analysis of alternatives, measures of effectiveness, cost, schedule, concepts of operations, and overall risk. The AoA also assesses the Critical Technology Elements (CTEs) associated with each proposed materiel solution, including technology maturity, integration risk, manufacturing feasibility, and technology maturation and demonstration needs. This phase concludes with the “Milestone A decision,” where the MDA makes formal decisions concerning the capabilities required and the strategy that will be used to acquire them (Acquisition Program or COTS). The MDA decisions are documented in an Acquisition Decision Memorandum (ADM).

*Technology Development Phase* - The completion of the Milestone A decision by the MDA authorizes entry into the Technology Development Phase. The goal of this phase is to reduce technology risk, determine and mature the appropriate set of

technologies to be integrated into a full system, and to demonstrate CTEs on prototypes. This is a developmental phase characterized by continuous technology discovery and development resulting from teaming between the contractors, buying commands, and program managers. Guided by the ICD and the Technology Development Strategy, the goal is to assess the viability of various technologies while simultaneously refining user requirements, leading to the production of the Capability Development Document (CDD). This assessment often includes competitive prototyping by prospective contractors to demonstrate or test critical technologies on a component level. At its conclusion, the Phase has identified an affordable program or increment of militarily useful capability. The technology and manufacturing processes for that program or increment have been assessed and demonstrated in a relevant environment, and the manufacturing risks have been identified. The phase ends at the Milestone B decision, with the MDA approving a final CDD and authorizing initial production.

*Engineering and Manufacturing Development Phase* - The Engineering and Manufacturing Development Phase begins after the Milestone B decision. This phase consists of two major efforts - Integrated System Design, and System Capability and Manufacturing Process Demonstration, separated by the Post-Critical Design Review Assessment (Post-CDR A). The first part, ISD, should define system functionality and interfaces, complete hardware and software detailed design, and reduce system-level risk. ISD then concludes with the Post-CDR A, where the MDA makes an assessment of the system's design maturity and compares to the program outcomes specified in the Acquisition Program Baseline (APB). Following the Post-CDR A, the program begins System Capability and Manufacturing Process Demonstration. This includes demonstrations of the ability of the system to meet the defined key performance parameters (KPP's), and that system production can be supported by demonstrated manufacturing processes. Once the system has been proven to meet requirements and manufacturing processes have been effectively demonstrated, the MDA must reach a Milestone C decision, which concludes the development phase and authorizes the initiation of the production phase.

*Production and Deployment Phase* - The goal of the Production and Deployment Phase is to achieve an operational capability that satisfies mission needs. This can be divided into two functional parts—Low Rate Initial Production (LRIP) and Full Rate Production (FRP). Based on the CDD established at milestone B, the program manager works with contractors to begin LRIP and establish a production process, as well as baselines for the program. Intensive testing is completed to refine the production process, and ultimately lead to the Full Rate Production Design Review (FRPDR) by the MDA. Once the MDA provides the FRPDR approval, the program manager can initiate full rate production. The MDA then completes a Full Deployment Decision Review (FDDR) and authorizes the system to be fielded.

*Operations and Support Phase* - The Operations and Support phase completes the acquisition life cycle, and carries the process through fielding and eventually disposal. The goal is to establish a support program that meets the program readiness and support requirements, and sustains the system in the most cost-effective manner. Life-cycle sustainment includes tailored product support to achieve both specified and evolving support availability, reliability, and affordability. Product support can include many areas, including supply, maintenance, transportation, sustainment engineering, data management, Human Systems Integration (HSI), environmental considerations, safety, supportability, and interoperability. Once a system has reached the end of its life, it must be demilitarized and disposed of in accordance with all legal and regulatory requirements and policy relating to safety, security, and the environment. The useful life of a program can vary from a few years, such as in the case of the F-84 Thunderjet (Fact Sheet, 2011), to more than half a century, such as B-52 (still in active service after 62 years) (Boeing, 2014).

## **1. Business Processes**

Peeling back the very complex top layer of the Acquisition Process shown on the Horse Chart (Appendix C), we can observe the process is powered by numerous individual business transactions. Taking place between a combination of Buying Commands, Contractors, DCMA and DCAA, these transactions may consist of a few individual short-term contracts, or hundreds of very complex contracts spanning many

decades. Often overlooked as a whole, the “footprint” of this three-legged stool within the DOD Acquisition process is massive, and has a direct effect on almost every element of the process. While the significance of contracts in the production phase is obvious, the reality is that the teaming of the three entities of the three-legged stool is critical in every single phase. Examples of these business processes include:

*Matériel Solution Analysis Phase* - Buying Commands and program managers work with DCMA (who in-turn works with potential contractors) to analyze source-selection considerations and matériel solution alternatives leading up to the Milestone A decision.

*Technology Development Phase* - Technology development contracts are issued and closed out (see *contract life cycle*, below). Supported by DCMA, Request for Proposals (RFP’s) are developed and issued, and Production Support strategies are developed by the Buying Command/PM.

*Engineering and Manufacturing Development Phase* - Development contracts are issued and closed out. Monitored by DCMA and coordinated by the Buying Command, the production of prototypes begins. The product support plan and product support capability are also established between DCMA, the Buying Command, and the contractors.

*Production and Deployment Phase* - The “meat” of the Acquisition process, LRIP and FRP contracts are awarded and executed. Production is monitored by DCMA contract, industrial, and quality control specialists and coordinated with the buying command.

*Operations and Support Phase* - FRP contracts continue to be executed, and DCMA continues production monitoring, however this phase also includes disposal. Disposal may consist of simply FRP contract closeout, or it may consist of entirely new contracts being awarded, executed and closed to adhere to laws and regulations unique to the disposal of the system.

## **2. The Contract Life Cycle**

As mentioned, almost every step in the DOD Acquisition process consists of the issuance of one or multiple contracts. Each contract issued must progress through a series of steps that are common across all contracts. This process is initiated as soon as a need is identified by the Buying Command.

## **3. Proposal, Award and Negotiations**

The Command works with DCMA to compose and publish a request for proposal (RFP). Contractors will submit proposals to the buying commands in response to the RFP. These proposals are then routed in one of two ways: Small-dollar or low-risk (to the government) proposals may be routed to a DCMA or Buying Command cost-price analyst who will review the proposal to determine its reasonableness and provide advice to the Buying Command's Contracting officer, responsible for awarding the contract. For more complex or significant contracts, the Buying Command will request a formal GAGAS-compliant audit from the DCAA. These DCAA audits result in formal audit reports containing detailed analysis and findings, as well as a formal audit opinion on the reasonableness of the proposal with regard to the FAR. Additionally, at the request of the Contracting officer, DCAA can perform an Accounting System Review to provide a formal opinion on whether the potential contractor's accounting system is designed to track costs in accordance with the FAR. The Buying Command's Contracting officer can then use DCAA's findings as a basis for pricing negotiations with the contractor at the time the contract is awarded.

## **4. Contract Performance**

Following the award of a contract by the Buying Command, the contractors begin performance on the contract. There are over 70 administrative functions detailed in the FAR related to contract administration during the performance process. For production contracts, DCMA will have Industrial and Quality Assurance Specialists on-site to monitor the contractor's performance and report to the Buying Command. With long-term contracts, the Buying Command may also pass off administration of the contract to DCMA. As defined by FAR 42.302(a), administration includes monitoring billings,

billing rates, contract limitations, annual escalations, and determining the allowability of costs. The DCAA supports both the Buying Command and DCMA during the administration process during the contract performance phase in a number of ways, providing the following services:

- *Paid Voucher Reviews* - Evaluates the validity of the contractor's billings.
- *Labor Floorchecks* - Evaluates the validity and control over labor costs.
- *Material Existence and Consumption Checks*- Evaluates the validity and control over direct material costs.
- *Incurred Cost Audits* - Evaluates the costs incurred and claimed by the contractor during a given year under the criteria described in FAR 31.
- *Forward Pricing Audits* - Evaluates proposed pricing rates to be used in contract modifications and add-ons for reasonableness and allowability.
- *Provisional Billing Rate Audits* - Evaluates proposed billing rates for a given year.

These services performed by DCAA are used by either the Contracting officer or DCMA to monitor and administer the contract during contract performance.

## **5. Contract Closing**

The final step in the contract life cycle is the contract closing process. Contracts may be closed for a variety of reasons, ranging from full contract completion to reductions in funding to termination at will by the contracting officer. Once a contract is ready to be closed, each entity on the Acquisition team has a responsibility. First, DCAA must complete all outstanding incurred cost audits, and provide DCMA an opinion on the allowability, allocability, and reasonableness of the contractor's claimed costs under FAR part 31. Next, DCMA must complete the contract close-out paperwork, including a release of claims form, and close the contract in DCMA's contract management system (MOCAS). The contractor must sign the release of claims form and return it to DCMA to attest that they have complete work on the contract and have no further contract costs to be claimed, or billed to the government. Once the contract has been closed out, the Buying Command is notified that the contract is complete. In some instances where



contracts are prematurely terminated at-will by the Contracting officer, DCAA is called in by the Contracting officer to perform an Audit of Termination Costs. Under FAR part 49, when contracts are terminated by the Contracting officer prior to completion, contractors are entitled to claim certain costs incurred as part of the contracting effort. DCAA's Termination Audit examines these claimed costs and issues an opinion to the contracting officer concerning the validity of the contractor's claimed termination costs.

### **3. Summary of Key Business Processes**

The DOD Acquisition process is a very lengthy, complicated process made up of numerous sub-processes. All of these processes occur between some combination of the key acquisition entities- Buying Commands, DCMA and DCAA. A closer look at the details of the Acquisition process reveals that the entire process is driven by a series of contracts, each of which must pass through its own individual life cycle. Based on the identification of the contract life cycle as the driver of the process, the following key processes have been identified:

- Contract Award (Appendix D)
- Contract Billings/Administration (Appendix E)
- Contract Closing (Appendix F)

### **D. MEASURE CURRENT PERFORMANCE LEVELS**

Ultimately, DOD Acquisitions are governed by two things: Capabilities required in support of the National Defense Strategy, and the Federal Budget. Congress is required by the Constitution to appropriate funds to fund acquisition programs. These appropriations bills are the legal granting of authority by Congress to the requesting department to incur obligations related to the request in the name of the Federal Government. An "obligation" is the legal reservation of funds to make a future payment of money. The obligation is incurred as soon as an order is placed, or a contract is awarded for the delivery of goods and/or performance of services.

The obligation period for appropriated funds depends on the nature of the program, see Table 3.

<b>Appropriation</b>	<b>Abbreviation</b>	<b>Obligation Period</b>
Operations and Maintenance	O&M	Annual
Military Personnel	MILPERS	Annual
Research and Development, Testing and Evaluation	RDT&E	2 years
Procurement	PROC	3 years (*5 years for Shipbuilding)
Military Construction	MILCON	5 years

Table 3. “Color of Money”

Once funds are appropriated, the budget authority is distributed throughout the DOD, and ultimately to the buying commands, through the Apportionment process. As an example, once congress appropriates PROC funding, the Buying Command has three years to award contracts from the appropriated funds before their budget authority expires. Each contract awarded is then subject to a five year expenditure period. This means that from the time the obligation was incurred, the Buying Command has five years to 1) ensure the obligation has been satisfied, and 2) to pay from the Treasury.

The federal budgeting process, driven by obligation and expenditure deadlines, ultimately governs the contracting process. We conclude, therefore, that the most critical measurement in the Acquisition process is *time*.

### **1. Contract Award**

Going back to the Horse-chart (Appendix C), before a Milestone A, B, C or the FRPDR can be authorized, some degree of source selection or contract award must occur. The award of a contract represents an obligation on behalf of the Buying Command. Given the obligation periods proscribed for the various appropriation categories (above), these contracts must be issued within that window. In order for the contract awarded, a series of steps must take place. Beginning with the process of drafting the RFP, proposals must be collected and analyzed. Not only does each step in this process take time, but it

involves each of the acquisition entities- DCAA, DCMA, and the Buying Command- to perform independent processes that must fall in-line to complete the contract award. A survey of current (as of 2014) RFP's on the FBO's website (FBO.gov) shows numerous RFP's that remain open for approximately two months. After all proposals are received, buying command cost-price analysts must complete evaluations of each proposal.

At this point in the process, the workflow branches out to the other agencies. For example, the cost-price analyst will contact DCMA to review technical data, such as the proposed labor hours and/or to determine whether the prospective contractor has a Comprehensive Small Business Subcontracting Plan (DFARS 252.219). DCMA will conduct their technical review and issue a formal report to the Buying Command detailing their conclusions. Concurrently, the cost-price analyst will contact DCAA to request a FPRP Audit to determine the validity of the proposed pricing rates, and, in many cases, a Pre-Award Accounting System Survey (Pre-Award) to determine whether the contractor's accounting system is designed to monitor costs in accordance with FAR part 31. For each of these procedures, DCAA will conduct a formal, GAGAS compliant audit and issue an audit report documenting their conclusions and providing the supporting data for those conclusions. During FY 2012, a FPRP Audit took DCAA an average of 110 days to complete (Fitzgerald, 2013).

Once the cost-price analyst receives the results from DCAA and DCMA, they must then integrate the findings of these reports into their proposal analysis. The buying command team then initiates negotiations, and ultimately awards a contract. Overall, the process could take well over 12 months, depending on the complexity of the proposal.

## **2. Contract Billings/Administration (Performance)**

As mentioned, there are over 70 administrative contract functions detailed in the FAR. For our purposes, we will highlight the billing process as an example of the current contract workflow.

Each year, contractors provide DCMA or the Buying Command with provisional billing rate proposals. The rates proposed represent the rates for the upcoming year based on contractor's estimate of the future year's costs. The responsible party (DCMA or the

Buying Command) is responsible for determining whether the proposed rates are reasonable, usually by requesting a Provisional Billing Rate Audit from DCAA. Once an audit is requested, DCAA initiates its audit procedures and conducts a formal audit in compliance with GAGAS, and issues an audit report detailing its findings. When the responsible party approves the rates, they are granting the contractor permission to bill the government using the approved rates during the subject year. Provisional Billing Rates are also used by Contracting officers as a tool for negotiating and pricing follow-on contracts.

### **3. Contract Closing**

As a contract is completed, a number of closing procedures must be performed. First, the Buying Command must perform an inspection and determine that the good or service provided is acceptable and meets the performance parameters described in the contract's statement of work. Next, DCMA must complete the required administrative procedures to close out the contract, chiefly to determine and finalize the costs claimed by the contractor for payment. In doing this, DCMA relies heavily upon formal audit reports issued by DCAA stating an opinion on whether the contractor's claimed costs are reasonable, allocable and allowable under the FAR. DCAA's audit reports also detail the costs questioned as a result of their examination, and the basis for questioning the costs. DCAA performs these Incurred Cost Audits for each year of costs incurred under the contract. Once the audit report is received, DCMA reviews DCAA's audit findings and either sustains or dissents on the individual questioned costs to determine the final amount of costs and fee that will be awarded to the contractor. It is important to note that final payment cannot be made until the contract has been closed out. Under the federal budgeting process, once the buying command has entered into an obligation (awarded a contract); they have a five year limit in which they must make payments. Any appropriate funds that have not been expended within five years of the obligation are returned to the Treasury, or "expire." This means that from the contract closing process *must* be completed within five years of the obligation of the appropriated funds.

## **E. ANALYZE BUSINESS PROCESSES**

The following represents the authors' conclusions based on their subject matter research, masters-level studies at the Naval Postgraduate School, and work experience as DCAA Auditor, Air Force Cost-Price Analyst, and Assistant Controller for Lean Accounting Systems. We will analyze the contract life cycle business processes from multiple perspectives on the Acquisition team, such as that of a cost-price analyst and auditor.

### **1. Air Force Cost/Price Analyst's Perspective: Revised Statement of Work**

For our purposes, we will examine a scenario where the cost-price analyst is working on a sole source effort and that the RFP has been written, submitted, and approved. In author Lichtig's opinion, the timeliness problem begins at the buying command level or higher up (depending on the acquisition effort in question). For example, in procuring a satellite which can take up to seven years to build and launch, the RFP may be time sensitive thus giving the prime contractor only a few months or less to submit their proposal. If the prime has several subcontractors in mind, then they too will need to submit their proposals in a timely manner. All of these must be coordinated.

There have been numerous times when the prime/subcontractor submitted their proposals in a timely manner, and the Government team started to analyze them only to have the buying command submit a new statement of work (SOW). A new SOW forces the contractors to revise and resubmit their proposals. Once the prime/sub submitted their new revised proposals, an analysis was conducted on both the original and revised proposals to see where the differences were and, if feasible, the Government team was able to pick up from where they left off. The goal was not to duplicate prior effort.

One such example occurred during the production of the AEHF Space Vehicle (SV) 4 satellite. The existing AEHF prime contractor, Lockheed Martin Space Systems Company submitted its original proposal for the SV4 production effort on 17 May 2010, and subsequently revised it on 11 June 2010 and 09 July 2010, for a final proposed price of \$2.118B.

In changing the original requirements of the satellite, the Government required the prime/sub to re-submit multiple proposals which created time pressures for both the contractor and Government teams, as well as sky rocketing proposal preparation costs into the millions of dollars. Decisions were made to revise the SOW without considering the tangible effects of the change on the down-stream process, specifically on the completion dates and the proposal costs.

Yet another common breakdown in the contract life cycle centers on the lack of Forward Pricing Rate Agreements (FPRAs). In the not too distant past, DCAA would receive a binder full of rate information from the contractor, annually. For direct labor and indirect rates, it usually covered up to five out-years. DCAA would perform their audit of the information, and at the same time, DCMA would perform their own analysis. At a given point in time, the DCMA – Divisional Administrative Contracting officer (DACO) would review both reports and come up with the Government's official position. A meeting with the contractor would then follow and negotiations of the FPRA would commence. Once everyone (Government and contractor) agreed to the rates, the FPRA was published and distributed.

The benefit of having established FPRAs for both direct and indirect rates plus COM factors was that it expedited analysis of future proposals. Since the rates were agreed to by both parties in advance, the expectation was that proposals received would be based on the rates already agreed upon. These rates have essentially been reviewed in advance, and therefore DCAA, DCMA and Cost-Price Analysts could reduce the amount of work required in reviewing the proposal and reach conclusions more quickly.

During 2009, the GAO (the DoDIG later concurred) released a very critical report on the status of the DCAA. Specifically, the report suggested:

In consultation with DOD stakeholders, review DCAA's current portfolio of audit and nonaudit services to determine if any should be transferred or reassigned to another DOD agency or terminated in order for DCAA to comply with GAGAS integrity, objectivity, and independence requirements.

As a result of the report, DCAA was no longer considered “independent” and therefore, DCAA ended all “non-audit” (examination level) engagements. My shifting the workload to only address examination-level procedures, the capacity of audits that can be produced has decreased, and the achievable turn-around time for the audits has increased.

Additionally, it is not uncommon for a contractor to submit new rates several times per year. It is very difficult for FPRAs to be established when there is a “leap-frogging” of rates, and the audits must be re-started. As a consequence, there have been numerous cases where the auditor could not opine on the rates because there were no established ones to work with as a historical cost baseline. In these instances, DCAA is left to simply verify the proposed rates to the contractor’s books and records. How does this ultimately help the PCO negotiated a contract? It does not, because once again, DCAA cannot offer an audit opinion.

## **2. DCAA Auditor’s Perspective: Inadequate Proposals**

There are two very important procedures a DCAA auditor must complete when receiving a proposal. The first is to determine whether it adequately includes all the information required under the FAR, and the second is to determine the risk to the Government the proposal carries with it. Risk to the government is a balance between the value of the potential contract and the level of effort to be undertaken by the government in auditing it. We will focus on the former, however.

The DCAA Contract Pricing Proposal Adequacy Checklist is used for assessing the adequacy of a contract price proposal in accordance with FAR Part 15, Table 15-2 (Appendix A) and DFARS 215.408. The checklist assesses the adequacy of cost or pricing data. It consists of:

1. General Instructions
2. Cost elements (material, subcontractors, interorganizational transfers, direct and indirect costs, other direct costs (ODC), etc.
3. Exceptions to Certified Cost or Pricing Data (commercial vs. non-commercial)
4. Formats for submission of line item summaries

### **3. Other**

The Contract Life-Cycle problem here is simple—If you accelerate the time between when the RFP is signed off and the proposal submission is received, you increase the chance that during the DCAA checklist process, the proposal will be deemed inadequate due to errors. When DCAA finds these issues, the proposal will be returned to the contractor as “inadequate,” and the contractor must incur more time and more proposal costs to revise the proposal and resubmit it. The procurement of that system essentially comes to a complete stop, thus increasing cost, schedule, and performance. The warfighter does not get the equipment needed to fulfill their mission and the American Taxpayer is now forced to pay more hard earned dollars to support the acquisition. It is a lose-lose situation.

### **4. DCAA Auditor’s Perspective: Generally Accepted Government Auditing Standards**

One critical element that defines an “audit,” as mentioned earlier is that the final conclusion reached is based on a rigorous set of professional standards, known within the government as GAGAS. DCAA auditors are required to complete the DCAA Proposal Adequacy Checklist and perform a detailed risk assessment as essential elements of GAGAS-compliant audits. Of critical importance, the procedures performed must be documented, supporting a well written audit report that clearly expresses DCAA’s opinion on the proposal, and also encompasses quality and is free of mistakes.

While GAGAS represents the government’s quality-control effort over audits, it is also chiefly responsible for creating major time and performance delays. A pricing proposal, for example, is an *estimate* of future work. The contractor submits the proposal with their costs based on one of the following:

1. Historical, actual costs adjusted for anticipated future changes
2. Anticipated costs based on the contractor’s experience and industry knowledge (when historical cost is not available)

It is noteworthy to point out that some proposals have a period of performance of ten years or more, and even the very best estimates are inherently less accurate the further



out they are projected, due to the uncertainties in the business environment. When DCAA audits these proposals, auditors look at historical data, verify the proposed rates, review the consolidated bill of material (BOM), and look into the other cost elements based on our risk assessment.

GAGAS-compliant audits and the related risk assessment usually take a very long time to complete. When working on the SV4 proposal, the PCO and Cost-Price Analyst requested an audit of the prime contractor from DCAA. DCAA provided an informal acknowledgment that they were beginning their audit, and would provide an estimated due date after the completion of their risk assessment. After a few months passed with no communication, the command contacted DCAA to follow up on the audit progress. DCAA informed them they were working on the risk assessment. After additional time had passed, the command followed up again, noting DCAA was still working on the risk assessment. Due to the significant amount of time spent on the risk assessment in its effort to be GAGAS compliant, the actual analysis of rates (referred to as “fieldwork” when completed at the contractor’s location) had not even been started. Before the fieldwork portion of the audit can commence, the risk assessment must be reviewed and signed off by the supervisory auditor. After several months had passed and the audit was not formally initiated (specifically, a due date had not been formally established), the PCO decided to cancel the audit because it was taking too long for DCAA to complete. The obligation of funds limitation was on the horizon, and DCAA was unknowingly threatening the acquisition team’s budget authority. Rather than relying on DCAA as a team member, the decision was made by the PCO to use the Air Force’s in-house experts and perform its own “audit” to determine fair and reasonable rates. As one of the key requirements of a GAGAS compliant audit is “auditor independence,” it is clear that the buying command cannot perform a GAGAS-compliant audit of costs proposed to itself. The takeaway from this scenario is that the customer (Air Force) was not interested in obtaining a GAGAS-compliant audit, but rather they wanted an analysis of a fair and reasonable contract price in a timely manner.

The Air Force and the other military branches do not have a lot of time to wait for things to happen. As soon as the RFP is released and proposal(s) is (are) submitted,

negotiation of the effort is usually about seven to nine months away. This means everyone on the Government team needs to work quickly and diligently. There is no time for wasted effort- *muda*- and there is certainly no time to wait for DCAA audits that will take several months to complete.

## **F. IMPROVE AND CONTROL BUSINESS PROCESSES**

### **1. Consider Downstream Effects**

In the SV4 proposal discussed earlier, the main problem identified was that repeated revisions to the SOW created ripple effects that flowed downwards through the acquisition team resulting in increased costs, wasted time and wasted effort. While mission requirements are dynamic and change with each day on the battlefield, opportunity exists to eliminate the *muda* from the proposal process by, at a minimum, communicating the buying command's intentions to the downstream acquisition team members. Once the Buying command sees the need for a revised SOW, the remaining elements of our "three-legged stool" should be immediately notified, such that the whole acquisition team may change direction like soldiers marching in formation rather than a mob running around in chaos.

### **2. Necessity of GAGAS**

The other element identified in the discussed examples is the applicability of GAGAS. While GAGAS is a quality-control measure that provides validity to audit opinions, the contracting officers do not hold an interest in GAGAS-compliance. There is common ground between DCAA's attempt at a near-ironclad audit opinion and the contracting officers' need for timely results. As stated in Chapter II, an examination-level audit expresses the highest level of assurance that the subject matter is, in all material respects, presented in accordance with some criteria. In this case, the proposed costs are presented in accordance with the FAR-specifically they are reasonable, allowable and allocable. We also note, however, that there are multiple levels of assurance available. GAGAS chapter five provides two alternatives to an examination: Reviews and Agreed-Upon-Procedures. Reviews offer a moderate degree of assurance, or "negative assurance," and require a significantly smaller scope of work than an examination.

Agreed-Upon Procedures offer no assurance, but rather list out the specific procedures performed, and the results of each procedure. The question then becomes, has the value in a GAGAS-compliant Examination Audit been misplaced? These audits are being performed to establish a fair and reasonable contract price for the contracting officer to use in negotiations, not to audit for audit's sake. If the Air Force feels, as in our above example, it can cancel its DCAA audit and accomplish its goals with its own analysts; did it really require a GAGAS-compliant examination-level audit opinion in the first place? Based on our research and observations, it seems apparent that there is a disconnect in the acquisition process between the goals of the buying command's contracting officers, DCMA, and the products delivered by DCAA. It is highly inefficient to spend months or years of the acquisition schedule and hundreds or even thousands of hours in labor costs to deliver a product that is in excess of what was actually needed. Efficiency may be gained in this process by educating contracting officers on the levels of assurance that may be requested, and by reforming DCAA's current policy of only performing Examination-level work (DCAA 2010).

### **3. Suggested Solution: An Integrated Product Team Approach**

One solution to solving contract life-cycle issues explored at the Naval Postgraduate School is the establishment of integrated product teams (IPT's). This type of team is not new to the DOD. In fact, agencies such as DCAA have had training on this topic dating back to the early 1990s. Defense Acquisition University defines an IPT as a "multidisciplinary group of people who are collectively responsible for delivering a defined product or process." The team would consist of the representatives from the Buying Command, the contractor, DCMA, DCAA, and military technical experts, as they are all responsible for delivering the final product to the warfighter. Involvement of all team members *throughout* the process saves cost, schedule, and performance. These savings were identified in the CFI survey, when only 22% of buying commands chose to seek additional assistance from DCAA (in negotiations), with an 89% approval for those teaming results.

One very visible example of the importance of IPT's can be seen in NASA's acquisition of the space shuttle *Challenger*. Nowhere in the acquisition process did

NASA pull together a functional IPT for the shuttle system. The three main elements of the shuttle were produced independently by three separate organizations (Thiokol, Rockwell, and Marietta). The IPT should have consisted of representatives from all the stakeholders, including Thiokol, Rockwell, Marietta, as well as NASA management, engineers, and end-users (Astronauts). The IPT would have discussed how the three main elements of the shuttle system interacted with one another, and addressed the impact of modifications to the system as a whole. As no IPT was ever assembled, discussions on the interconnectivity of the three parts and the related effects of independent modifications never took place. A simple o-ring joining two sections of the system together failed, and the entire shuttle system exploded 73 seconds after liftoff, killing all crew onboard and resulting in a total loss of the shuttle system and payload. A tragic allegory, we currently run the risk of the buying command, DCMA and DCAA producing their “parts” mostly independently of one another, with no formal or working IPT arrangement.

One success story of acquisition-effort IPT’s occurred during the course of the aforementioned SV4 effort. The AEHF Space Segment (MCPG/SS) was the lead IPT responsible for the evaluation of the proposal with support from Aerospace, Linquest, DCMA and other government IPTs. A joint Government/Contractor process was used to develop and review task descriptions and discuss Basis of Estimates (BoE’s) in a series of formal integrated working group (IWG) sessions prior to formal proposal submittal to the Government. Each BoE was evaluated and an acceptable range of effort and direct costs was determined based upon critical technical review and subjective evaluation. As a result of using IPTs, an updated proposal was submitted to the Government and subsequently the prime contractor revised 84 of the total 116 BoEs resulting in the revised proposal. DCMA discovered during the fact-finding and evaluation process that 20 of the prime contractor’s BoEs contained erroneous SV1, SV2 and/or SV3 actuals quoted as justification for the estimates. As a result DCMA issued a level 2 Contract Action Report (CAR) to the prime contractor demanding resolution of their errors in accounting system data. The prime contractor responded to the concerns by performing a full review of all 116 BoEs within the SV4 C1 proposal. The prime contractor’s review

revealed errors in a total of 84 BoEs resulting in a net \$1.4M reduction in the proposal across all CLINs. The Government evaluated the updates against the SV1, SV2 and SV3 actuals, applying engineering expertise to proposed labor tasks and schedules. This serves as a concrete example of how formalized IPT's could work in the acquisition process.

One of the most significant barriers to an effective IPT lies in GAGAS complications. Leading up to the release of the 2009 GAO report (GAO, 2009), a memorandum was issued by DCAA headquarters on audit guidance discontinuing the agency's participation in IPTs (DCAA, 2008). According to this memorandum, the current independence mentioned in GAGAS "prohibits DCAA from auditing their own work or providing nonaudit services that are significant or material to the subject matter of audits." There is a fine line between delivering a GAGAS-compliant audit report, and delivering what your customer actually needs. GAGAS Chapter Three states "Auditors and audit organizations must maintain independence so that their opinions, findings, conclusions, judgments and recommendations will be impartial and viewed as impartial by reasonable and informed third parties" (GAGAS 3.04). The question then becomes: independent from whom? GAGAS 3.05 goes on to answer this question, "...auditors should be independent from *an audited entity* during:..." We believe this clearly highlights *the contractor* as the organization from which DCAA must remain independent. Working with the buying command as an element of an acquisition effort IPT would not represent any impairment to independence.

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## **IV. SUMMARY, CONCLUSION, AND FUTURE RESEARCH**

### **A. SUMMARY**

The goal of our research was to identify the role of various entities in the acquisition process, determine their responsibilities, and analyze the workflow between these entities. We designed this research to focus on the acquisition process because while individual parts of the process are explored in great detail, we found a lack of focus on the overall process as a whole. Our goal was to answer one primary and five secondary research questions related to acquisition in order to gain a better understanding of the current responsibilities and goals of the acquisition entities. We hope this research will serve as a template for future studies of the efficiency and effectiveness of workflow across agencies within the acquisition process. Chapter I provided an overview of the study, as well as background information to establish the necessity of the research. The literature review in Chapter II examined data published by the GAO, DoDIG, DCAA, DCMA, DOD and USAF Space Command on history, responsibilities, performance metrics, future outlooks and challenges. In Chapter III, we performed our analysis of the data gathered in Chapter II by outlining and applying the Lean Six-Sigma framework to the acquisition process workflow. Finally, we then identified key constraints, reasons for the constraints, and offered a suggested solution for removal of the current constraints.

### **B. CONCLUSION**

#### **1. Research Findings**

Our study set out to answer the following question:

- 1) Where does everyone fit in to the overall acquisition process?

Based on our research, we observed that the acquisition process is governed by three main entities within the DOD- the buying command, DCMA, and DCAA- as well as external entities such as government contractors. Each of the three internal entities examined fit into multiple sections of the acquisition life cycle. We broke our research into subtopics, as follows:

### *Secondary*

- 2) What is each agency's role?
- 3) What is the key business process that drives the overall acquisition?
- 4) How do the agencies interact?
- 5) Are there opportunities for increased efficiency?

First, we researched the history, mission and current state of affairs for each of the three acquisition entities. The DCAA serves and the DOD's independent audit agency, and is tasked with performing audit and financial advisory services to its DOD partners. DCMA provides contract administration services to DOD partners with the goal of delivering products on-time and on-cost. The Buying Commands represent DOD acquisition programs authorized by Congress to make the obligations necessary to develop and acquire the assets needed to fulfill the national defense strategy.

After walking through the acquisition life cycle, we observed that the forward motion from one phase to the next within the acquisition process is driven by the execution of contracts. We then deduced that the contract life cycle is the main driver of the acquisition process. We defined the contract life cycle in three parts: Proposal/Award, Performance, and Contract Closing.

We then examined how the three agencies interact throughout the contract life cycle. During the contract award phase, the Command must draft an RFP, and may obtain assistance from DCMA. The proposals are received from potential contractors, analyzed by the Command's cost-price analysts, and audited by DCAA. Then the Contracting officer negotiates and awards the contract. The next phase is the contract performance phase. In this phase, DCMA monitors the contractor's performance on the contract, while DCAA monitors the contractor's billings and billing rates. Finally, during the contract closing phase, DCMA and the Buying Command determine whether satisfactory contract performance has been achieved. DCAA, meanwhile, completes its incurred cost audits and provides the Contracting officer with an audit opinion on the allowability, allocability and reasonableness of the contractor's claimed costs with respect to the FAR. The contracting officer and DCMA then use this data to close out the contract and authorize final payment.



We observed two specific opportunities for process improvement:

1. The entities involved in the acquisition process should stop thinking of themselves as independent agencies, and start thinking of themselves as members of an acquisition team. We observed that the decisions and actions of each entity of the “three legged stool” has a direct flow-down effect on the other two organizations. By adopting an IPT approach to acquisition and establishing regular and consistent communication across the acquisition team agencies, the DOD can reduce much wasted labor effort and improve delivery dates across the acquisition life cycle.
2. An IPT approach should serve to inform team members of the tools and services offered by each agency. Under GAGAS, there are information assurance options available beyond intensive, examination-level audits. DCAA must remain GAGAS-compliant, however improved communication between the contracting officer and DCAA auditors can more efficiently match the contracting officer’s needs with the product delivered by DCAA. This efficiency improvement could provide a drastic reduction in delivery time, and also a related reduction in costs.
3. Educate the contracting officers as to the various levels of audit opinions covered under GAGAS, and the level of assurance associated with each. The goal is to more efficiently match the contracting officers’ goals with the work performed by DCAA.

## **2. Recommendations**

Based on our research, we recommend that the DOD emphasize the acquisition community as a whole team. Every acquisition organization should be pushed to understand that they are one member of a larger team with the common goal of delivering a product to the warfighter. On a functional level, this concept should materialize in the formation of acquisition IPT’s consisting of representatives from the Command as well as DCAA and DCMA, meeting throughout the contract life cycle. Consistent, regular

communication on an IPT level from the very beginning of the contract life cycle will allow lead times and schedule bottlenecks to be identified early in the process. This teaming will also more efficiently match the needs and services of team members.

From the moment funding is appropriated, the Contracting officer should form an IPT that includes not only technical and military representatives, but DCMA and DCAA staff. All three entities should have a place at the table beginning with the establishment of an acquisition schedule, through negotiations, and at contract closing. None of the agencies appear to have a good understanding of what the others' responsibilities are, and this can be solved by working through the contract life cycle as a team.

Additionally, the Acquisition community should consider the objective of their audit requests, and consider weighing the timeliness versus level of assurance decision. If the timeliness of a report is more critical to the KO than the level of assurance, such as for smaller or lower-risk contracts, the KO should request a review from DCAA rather than an examination-level audit. While a review only provides a moderate level of assurance, the level-of-work requirements are significantly less, and will allow the acquisition to avoid the bottleneck of an examination-level audit. With majority of non-major contracts, timeliness affects the acquisition far more than the small audit differences uncovered by an examination. Conversely, a large or high-risk contract would benefit from an examination –level engagement, as large dollar amount may be questioned, and there will be a significant benefit from the elevated level of assurance. DCAA is currently making their version of an attempt at this risk-based approach by using a threshold of \$1M to determine which incurred cost audits (DCAA programmed-work) will receive examination-level audits. We suggest expanding this approach to non-programmed work (requests received from the KO, such as proposals), and allowing the KO to determine the significance of the risk (relative to their program as a whole), and the level of assurance desired.

### **C. AREAS FOR FUTURE RESEARCH**

During our study, we focused on the proposal phase of the contract life cycle. The interaction between these three acquisition entities extends well beyond contract

proposals. We suggest future research of the business process flow between the agencies in the acquisition process expand to include other phases of the contract life cycle. While we believe the implementation of our IPT approach will solve many problems not even explored within our study, we believe further application of the Lean Six-Sigma framework to other areas of the acquisition process will yield similar results.

We also were able to obtain significantly more data concerning DCAA and Air Force Space Command than DCMA. We encourage further research into the interactions between DCMA and its acquisition team members. Of note, many of the responsibilities formerly held by DCAA have been “passed off” to DCMA in recent years. As DCMA is not an audit agency, it begs the question of how their responsibilities could be interchangeable. Additionally, the authors found it unusual that DCAA currently reviews contractor’s billings, when that would appear to be a contract administration function falling under DCMA’s mission. Further research into the division of responsibilities between DCAA and DCMA may also benefit the Department.

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## APPENDIX A. FAR TABLE 15-2

### **FAR Table 15-2: Instructions for Submitting Cost/Price Proposals When Certified Cost or Pricing Data Are Required**

#### **I. — General Instructions**

A. You must provide the following information on the first page of your pricing proposal:

- (1) Solicitation, contract, and/or modification number;
- (2) Name and address of offeror;
- (3) Name and telephone number of point of contact;
- (4) Name of contract administration office (if available);
- (5) Type of contract action (that is, new contract, change order, price revision/redetermination, letter contract, unpriced order, or other);
- (6) Proposed cost; profit or fee; and total;
- (7) Whether you will require the use of Government property in the performance of the contract, and, if so, what property;
- (8) Whether your organization is subject to cost accounting standards; whether your organization has submitted a CASB Disclosure Statement, and if it has been determined adequate; whether you have been notified that you are or may be in noncompliance with your Disclosure Statement or CAS (other than a noncompliance that the cognizant Federal agency official has determined to have an immaterial cost impact), and, if yes, an explanation; whether any aspect of this proposal is inconsistent with your disclosed practices or applicable CAS, and, if so, an explanation; and whether the proposal is consistent with your established estimating and accounting principles and procedures and FAR [Part 31](#), Cost Principles, and, if not, an explanation;
- (9) The following statement:

This proposal reflects our estimates and/or actual costs as of this date and conforms with the instructions in FAR [15.403-5\(b\)\(1\)](#) and Table 15-2. By submitting this proposal, we grant the Contracting officer and authorized representative(s) the right to examine, at any time before award, those records, which include books, documents, accounting procedures and practices, and other data, regardless of type and form or whether such supporting information is specifically referenced or included in the proposal as the basis for pricing, that will permit an adequate evaluation of the proposed price.
- (10) Date of submission; and
- (11) Name, title, and signature of authorized representative.

B. In submitting your proposal, you must include an index, appropriately referenced, of all the certified cost or pricing data and information accompanying or identified in the proposal. In addition, you must annotate any future additions and/or revisions, up to the date of agreement on price, or an earlier date agreed upon by the parties, on a supplemental index.

- C. As part of the specific information required, you must submit, with your proposal—
- (1) Certified cost or pricing data (as defined at FAR [2.101](#)). You must clearly identify on your cover sheet that certified cost or pricing data are included as part of the proposal.
  - (2) Information reasonably required to explain your estimating process, including—
    - (i) The judgmental factors applied and the mathematical or other methods used in the estimate, including those used in projecting from known data; and
    - (ii) The nature and amount of any contingencies included in the proposed price.
- D. You must show the relationship between contract line item prices and the total contract price. You must attach cost-element breakdowns for each proposed line item, using the appropriate format prescribed in the “Formats for Submission of Line Item Summaries” section of this table. You must furnish supporting breakdowns for each cost element, consistent with your cost accounting system.
- E. When more than one contract line item is proposed, you must also provide summary total amounts covering all line items for each element of cost.
- F. Whenever you have incurred costs for work performed before submission of a proposal, you must identify those costs in your cost/price proposal.
- G. If you have reached an agreement with Government representatives on use of forward pricing rates/factors, identify the agreement, include a copy, and describe its nature.
- H. As soon as practicable after final agreement on price or an earlier date agreed to by the parties, but before the award resulting from the proposal, you must, under the conditions stated in FAR [15.406-2](#), submit a Certificate of Current Cost or Pricing Data.

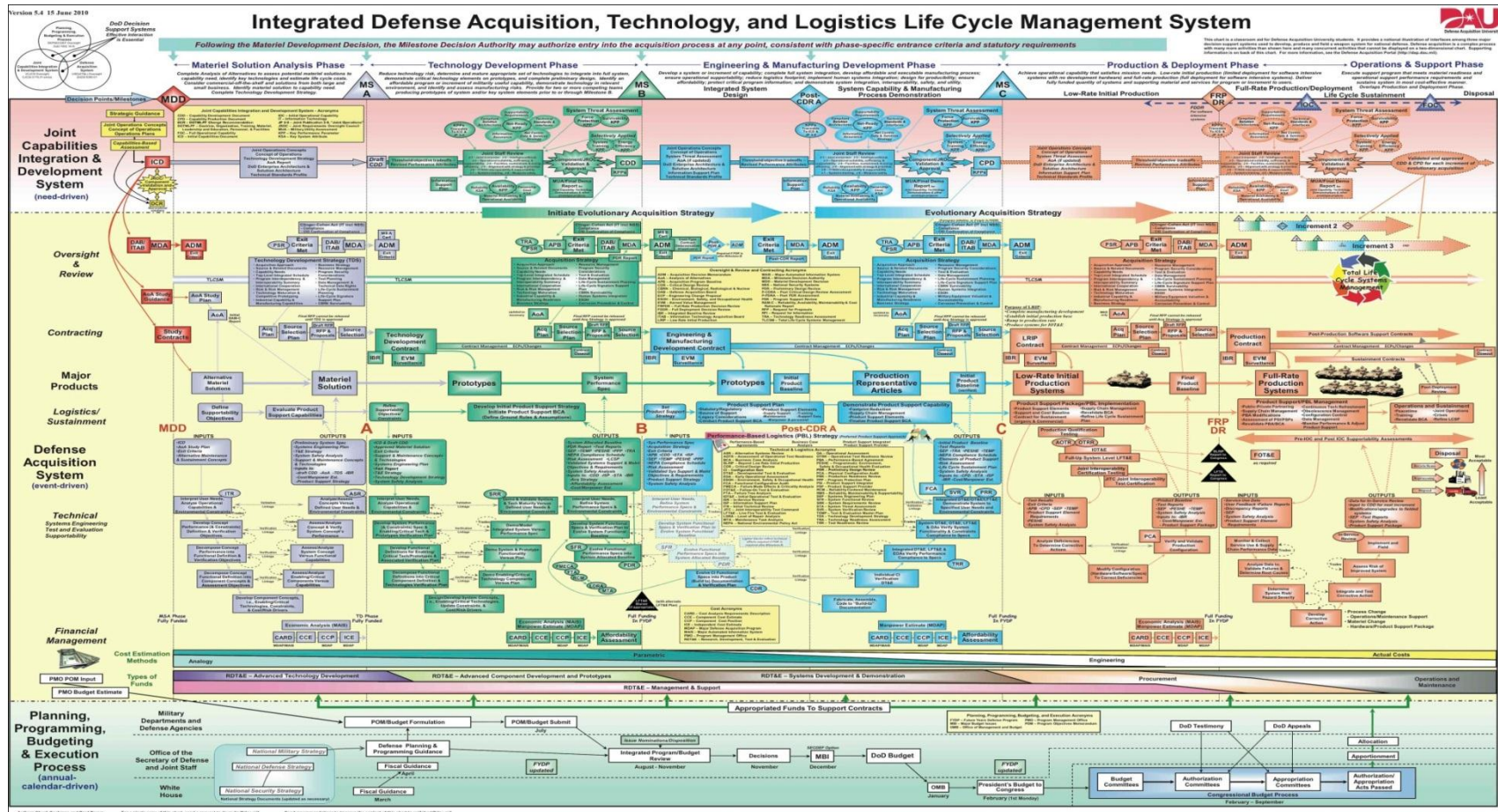
## APPENDIX B. DCAA COMMAND FEEDBACK SURVEY RESULTS

		1st Half 2008		2nd Half 2008		1st Half 2009		2nd Half 2009		1st Half 2010		2nd Half 2010		1st Half 2011		2nd Half 2011	
#	Question	# of Surveys with "Yes" Answers	Percent	# of Surveys with "Yes" Answers	Percent	# of Surveys with "Yes" Answers	Percent	# of Surveys with "Yes" Answers	Percent	# of Surveys with "Yes" Answers	Percent	# of Surveys with "Yes" Answers	Percent	# of Surveys with "Yes" Answers	Percent	# of Surveys with "Yes" Answers	Percent
	Total Number of Surveys	236		247		266		159		176		149		148		120	
1	Was receipt of the audit report timely for the requestor's needs?	234	99%	234	95%	227	85%	132	83%	133	76%	125	84%	83	56%	69	58%
2	Did the requestor consider the audit report to be useful?	236	100%	246	100%	261	98%	152	96%	169	96%	141	95%	140	95%	117	98%
3	Did the customer consider the audit report sufficiently detailed?	235	100%	245	99%	259	97%	154	97%	166	94%	141	95%	143	97%	117	98%
4	Did the customer consider the audit report responsive to each item in the request?	236	100%	244	99%	259	97%	154	97%	162	92%	144	97%	142	96%	117	98%
5	Does the customer have suggestions for improving the report's usefulness and/or presentation?	5	2%	14	6%	23	9%	20	13%	27	15%	23	15%	19	13%	18	15%
6	Was communication (e.g., acknowledgement letter, timely coordination of issues that might delay audit, returning telephone calls, e-mails) between the FAO and customer considered sufficient?	235	100%	244	99%	251	94%	147	92%	155	88%	142	95%	137	93%	107	89%
7a	a. Did the customer request additional assistance after the audit report was issued (e.g. attendance at negotiations, further explain audit results)?	17	7%	39	16%	62	23%	39	25%	41	23%	46	31%	45	30%	26	22%
7b	b. If so, was the customer satisfied with the additional service? If customer not satisfied, request specific information about the problem.	17	100%	35	90%	57	92%	32	82%	39	95%	39	85%	39	87%	20	77%
8	Was the customer satisfied with the overall quality of our work?	236	100%	246	100%	260	98%	153	96%	169	96%	143	96%	142	96%	119	99%
9	Closing Question to Interview - Are there additional DCAA (FLA or FAO) services that we can provide (not limited to audit just discussed)?	9	4%	13	5%	22	8%	16	10%	30	17%	28	19%	21	14%	7	6%

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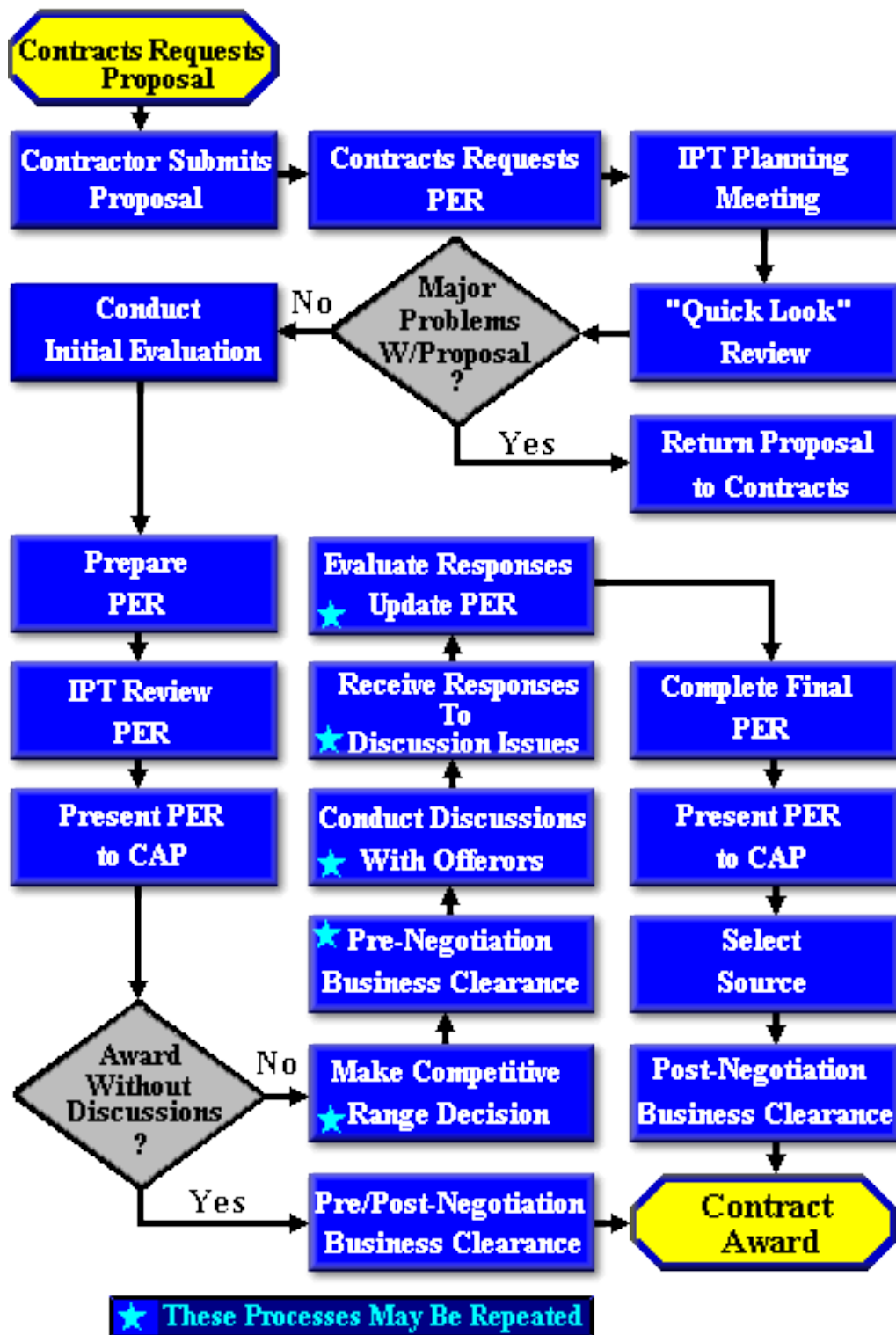


# APPENDIX C. INTEGRATED DEFENSE ACQUISITION, TECHNOLOGY, AND LOGISTICS LIFE CYCLE MANAGEMENT SYSTEM



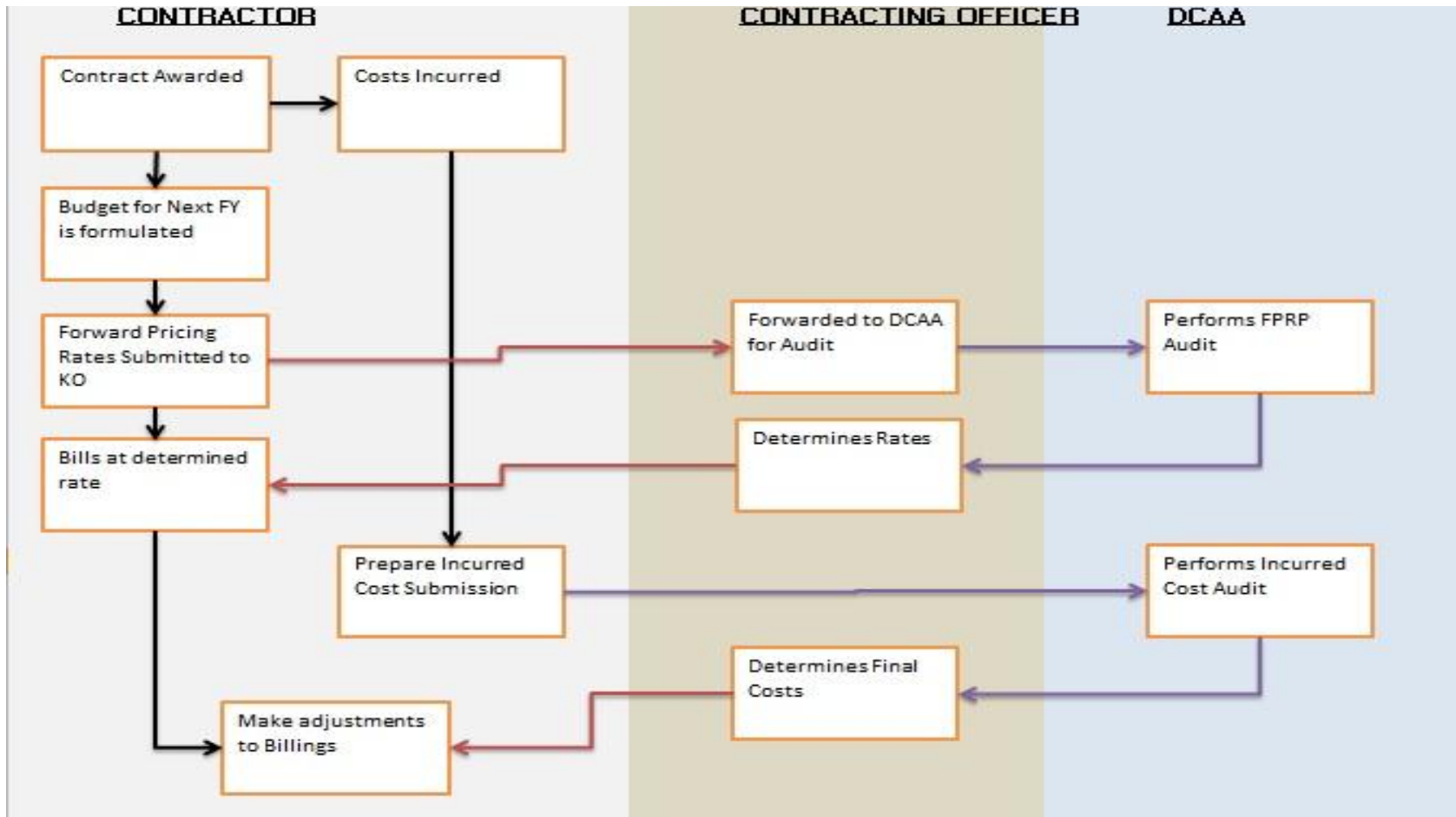
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## APPENDIX D. CONTRACT AWARD PROCESS



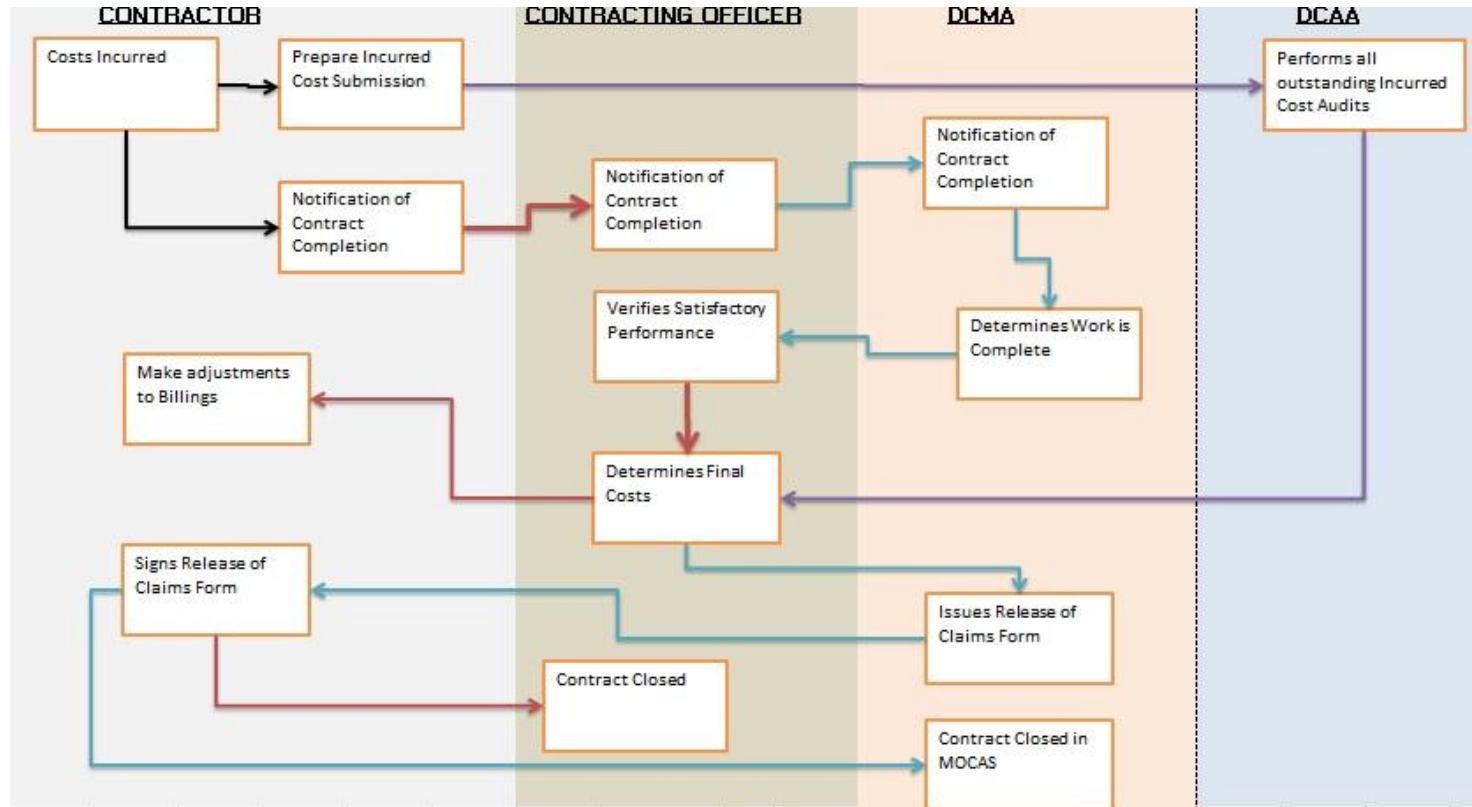
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## APPENDIX E. BILLING PROCESS



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## APPENDIX F. CONTRACT CLOSING PROCESS



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